



ANGOLAN LICENSING ROUND 2014

**The London Marriott Hotel
London
February 21th 2014**

08:00 – 09:00 : Registration

**09:00 – 09:10 : Introduction-Mr. Paulino Jerónimo, Member of
Sonangol Board**

09:10 – 10:40 : Technical Presentations

10:40 – 10:50: Break

10:50 – 11:50: Technical Presentations

11:50 – 12:30 : Questions and Answers Session

12:30 – 13:30: Lunch

13:30 – 18:00 : Private Company Meetings and Poster Sessions



EXPLORATION

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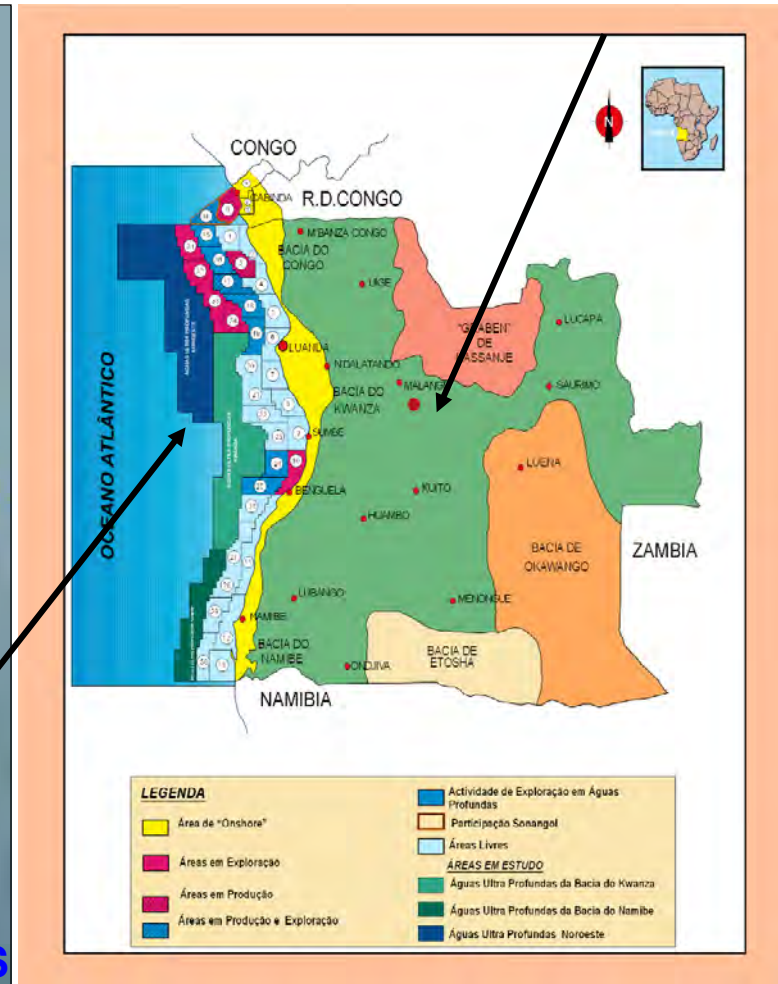
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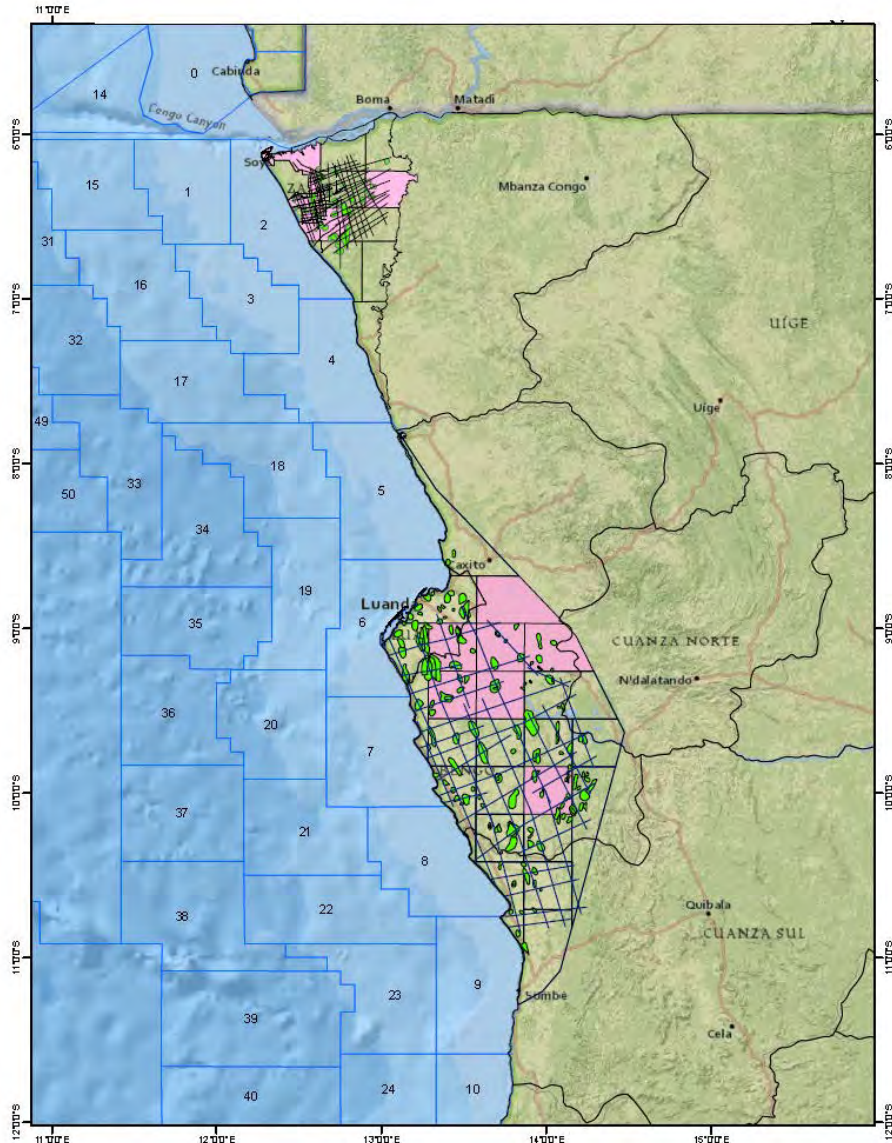
21.02.2014

- **INTRODUCTION**
- **ANGOLA EXPLORATION HISTORY**
- **EXPLORATION AND PRODUCTION SUMMARY**
- **EXPLORATION STRATEGY**
- **EXPLORATION ACTIVITIES IN ONSHORE KWANZA AND LOWER CONGO BASINS**
- **CONCLUSION**

INTERIOR BASINS



- SONANGOL WILL BID 10 BLOCKS FROM ANGOLA'S ONSHORE BASINS: 3 BLOCKS FROM LOWER CONGO (SOYO) AND 7 BLOCKS FROM KWANZA BASIN.
- 5 BLOCKS FROM ONSHORE WILL BE EVALUATED (DRILL A WELL), 4 OF WHICH IN THE KWANZA BASIN AND ONE WELL IN THE LOWER CONGO BASIN.
- IN THE EVENT OF SUCCESS, THESE BLOCKS WILL BE BID OUT TO LOCAL AND FOREIGN COMPANIES
- THE RECENT DISCOVERIES IN ADJACENT BASINS INDICATES A GREAT POTENTIAL IN THE BLOCKS TO BE BID. THE NEW 2600 KM² SEISMIC DATA ACQUIRED, INFERRED HIGH POTENCIAL IN 2013 LICENSING BLOCKS.



LOWER CONGO BASIN ONSHORE BLOCKS UP FOR BID

CON1, CON5, CON6

ONSHORE KWANZA BLOCKS UP FOR BID

KON3, KON5, KON6, KON7,
KON8, KON9, KON17

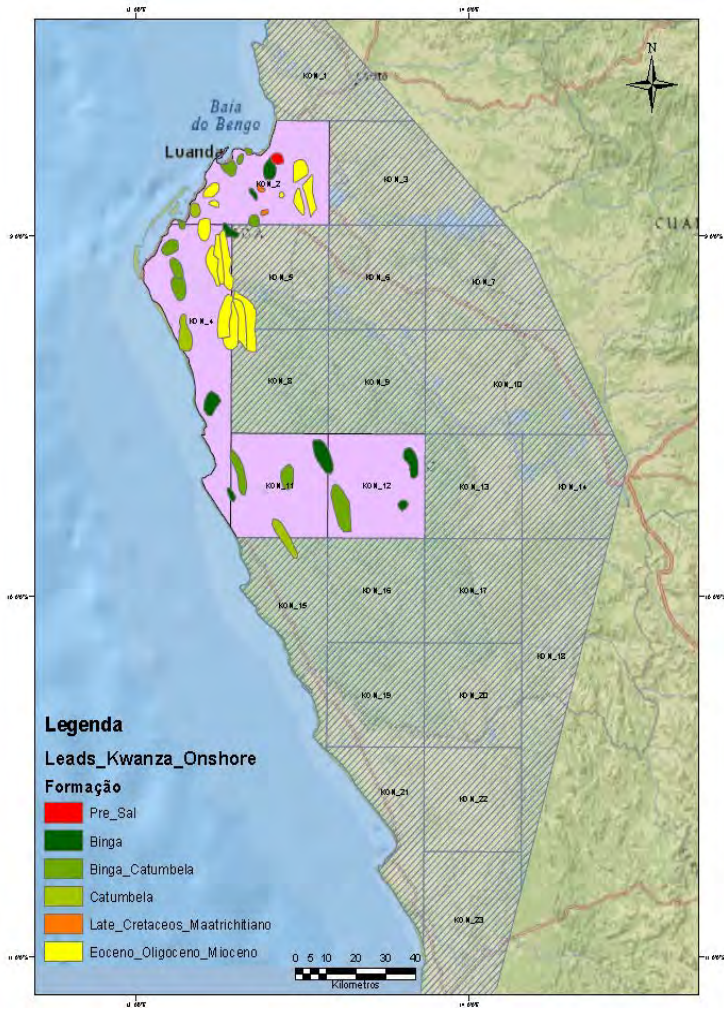
SONANGOL WILL EVALUATE

5 BLOCKS IN ONSHORE BASINS

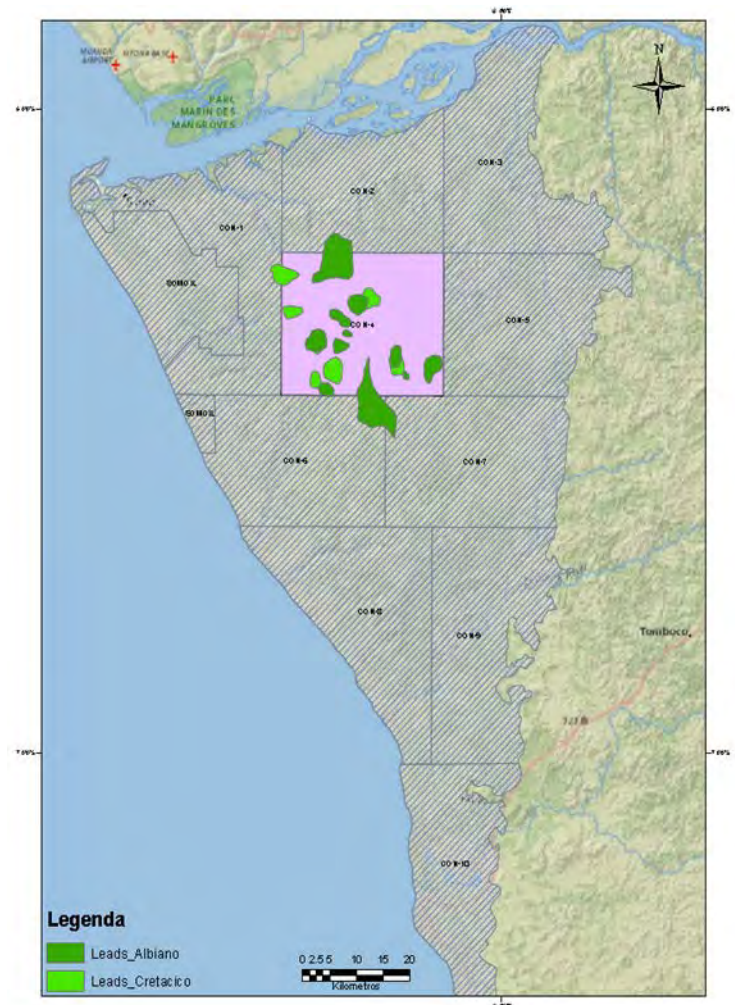
ONE IN ONSHORE LOWER CONGO

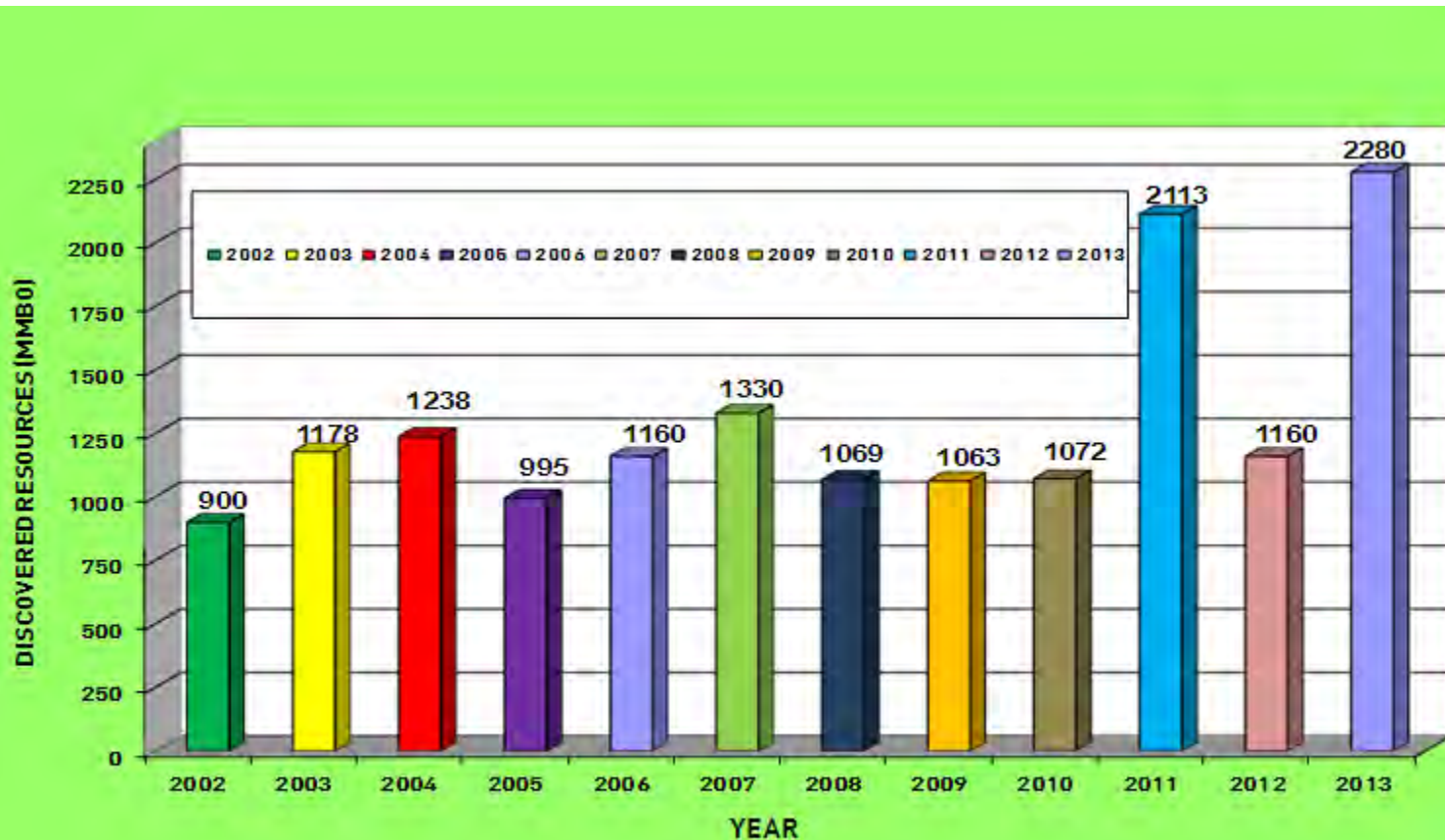
AND 4 IN ONSHORE KWANZA.

ONSHORE KWANZA LOCATION MAP

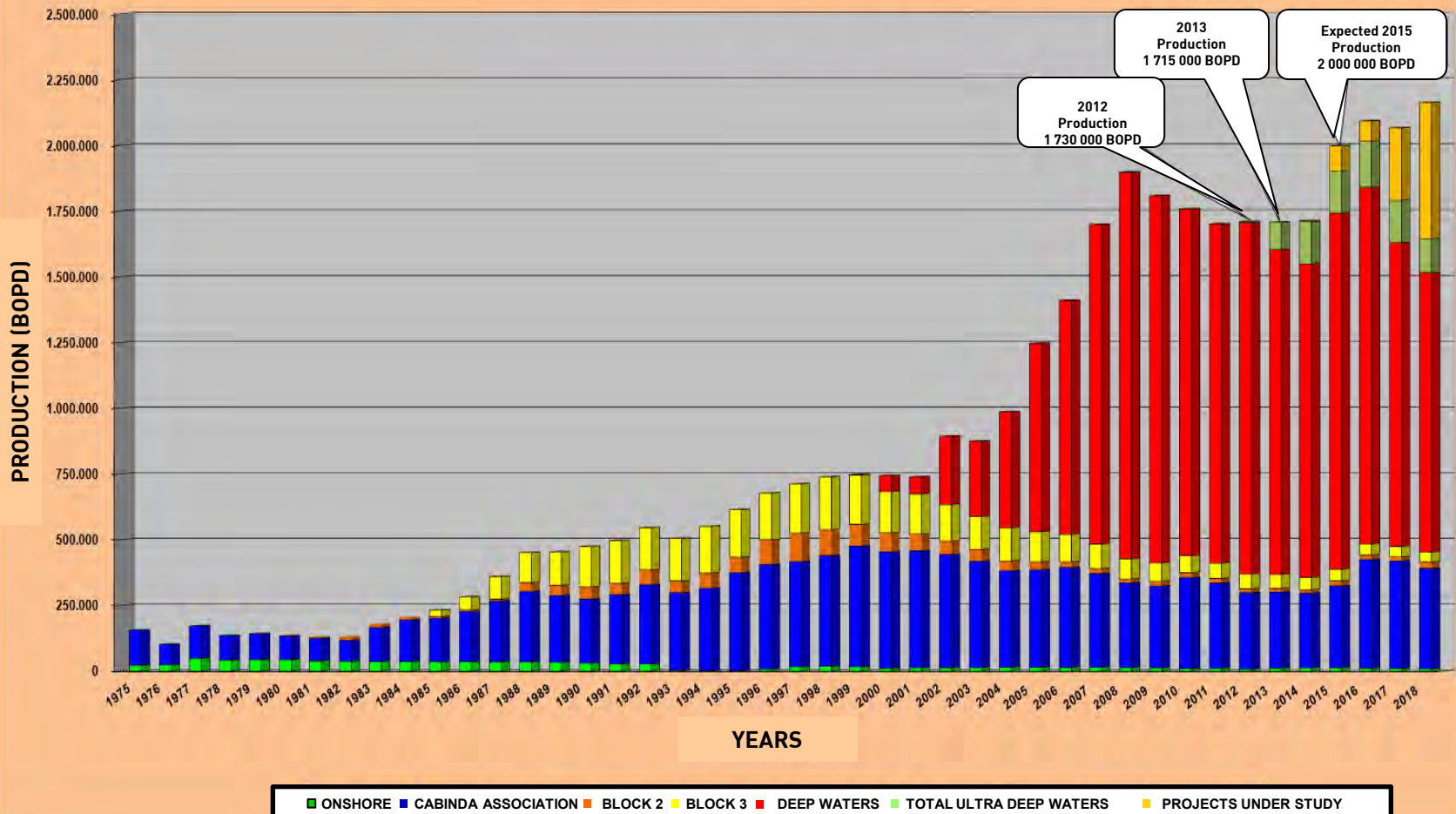


ONSHORE LOWER CONGO LOCATION MAP





HISTORY OF PRODUCTION AND PROVISION OF OIL IN ANGOLA

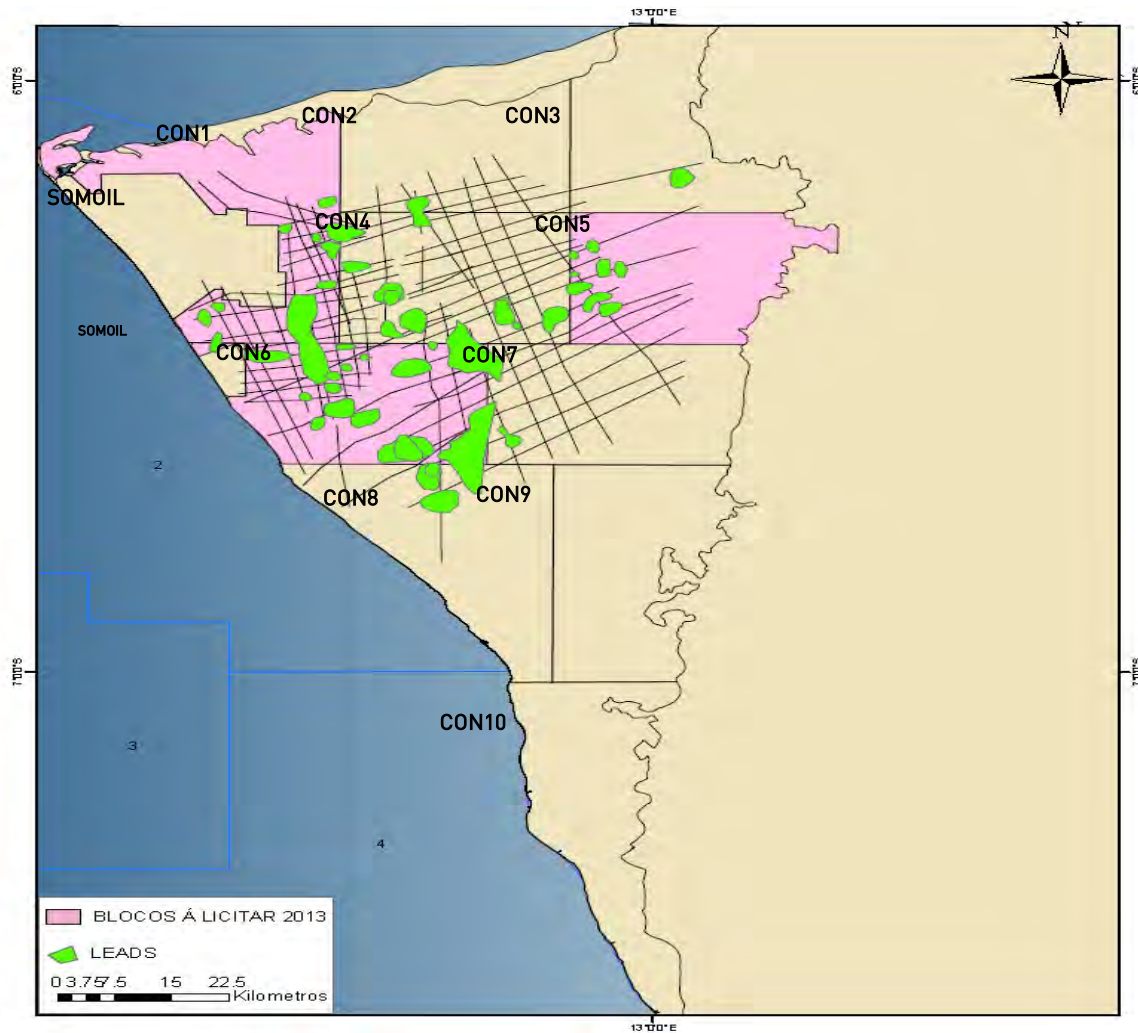


2014 – 2024 MILESTONES

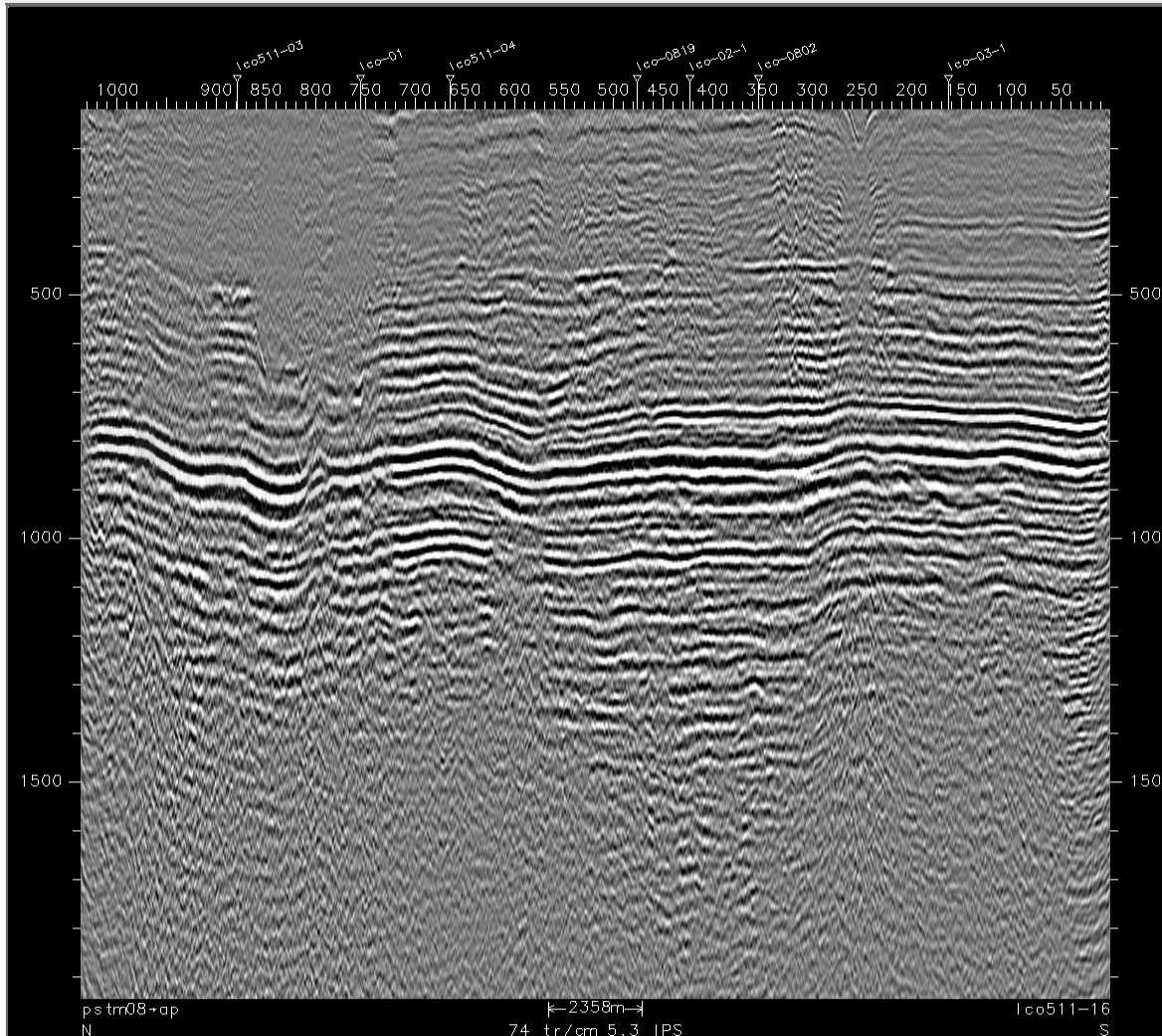
1. ACHIEVE 3 MMBOPD PRODUCTION IN 2024
2. INCREASE SONANGOL RESERVES BY 1 MMBOPD
3. INCREASE THE LOCAL CONTENT PRESENCE IN THE PETROLEUM BUSINESS.

2014 BIDDING STRATEGY

SONANGOL WILL BID 10 BLOCKS FROM ANGOLA'S ONSHORE BASINS: 3 BLOCKS FROM LOWER CONGO (SOYO) AND 7 BLOCKS FROM KWANZA. 5 BLOCKS FROM ONSHORE WILL BE EVALUATED (DRILL A WELL), 4 OF WHICH IN THE KWANZA AND ONE WELL IN THE LOWER CONGO.



SEISMIC LINE ONSHORE LOWER CONGO



EXTENSIVE EXPLORATION PRIOR TO 1975 BY TOTAL/ANGOLA, FINA, SINCLAIR, PETRANGOL, AND AMOCO

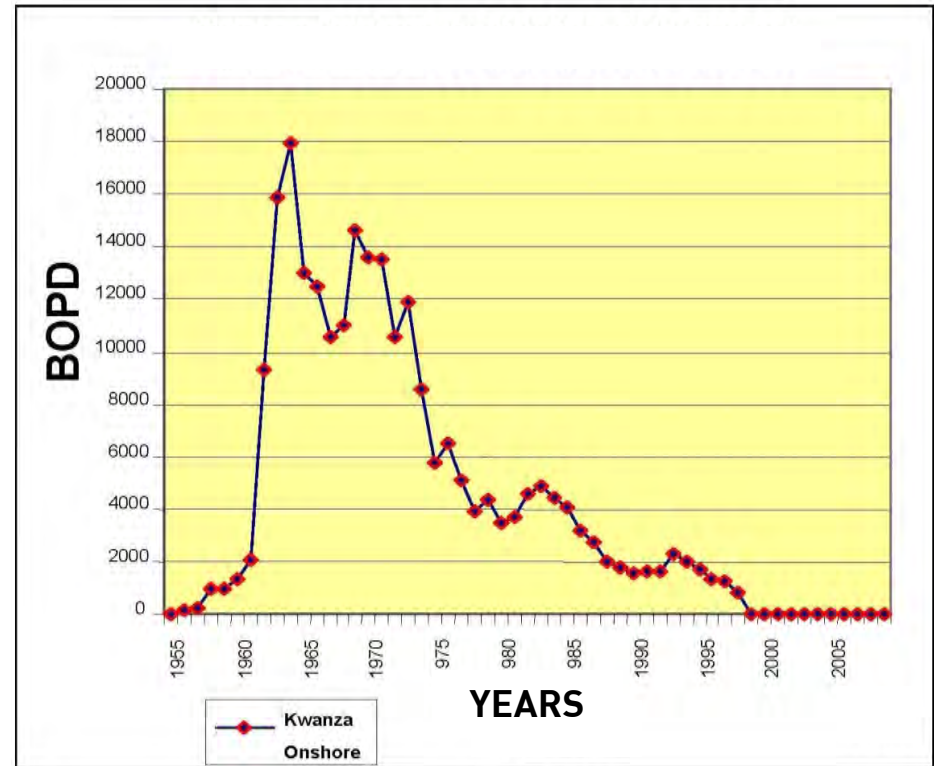
➤ **FIRST WELL DANDE-1, DRILLED IN 1915**

➤ **FIRST DISCOVERY, BENFICA FIELD, 1955**

➤ **THROUGH 1975, MORE THAN 250 EXPLORATION AND EVALUATED WELLS WERE DRILLED**

➤ **“OIL-IN-PLACE” IS ESTIMATED AT 10 BILLION BARRELS OF OIL**

➤ **PRODUCED OIL WAS AT 116.47 MILLIONS OF BARRELS**

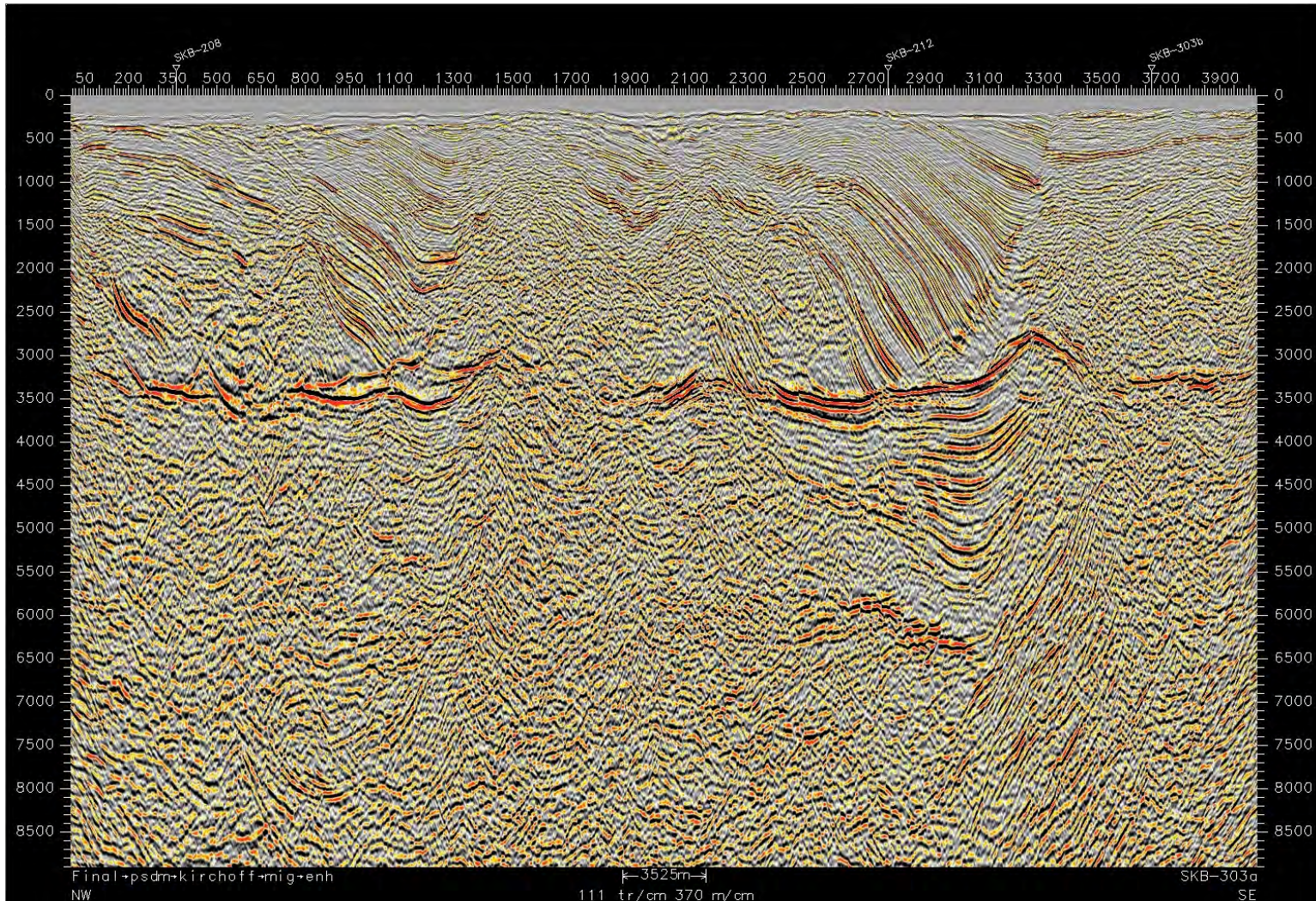


ACCUMULATED PRODUCTION: 116.47 MMBO

2D SEISMIC DATA ACQUIRED IN 2010

TOTAL : 2600 KM





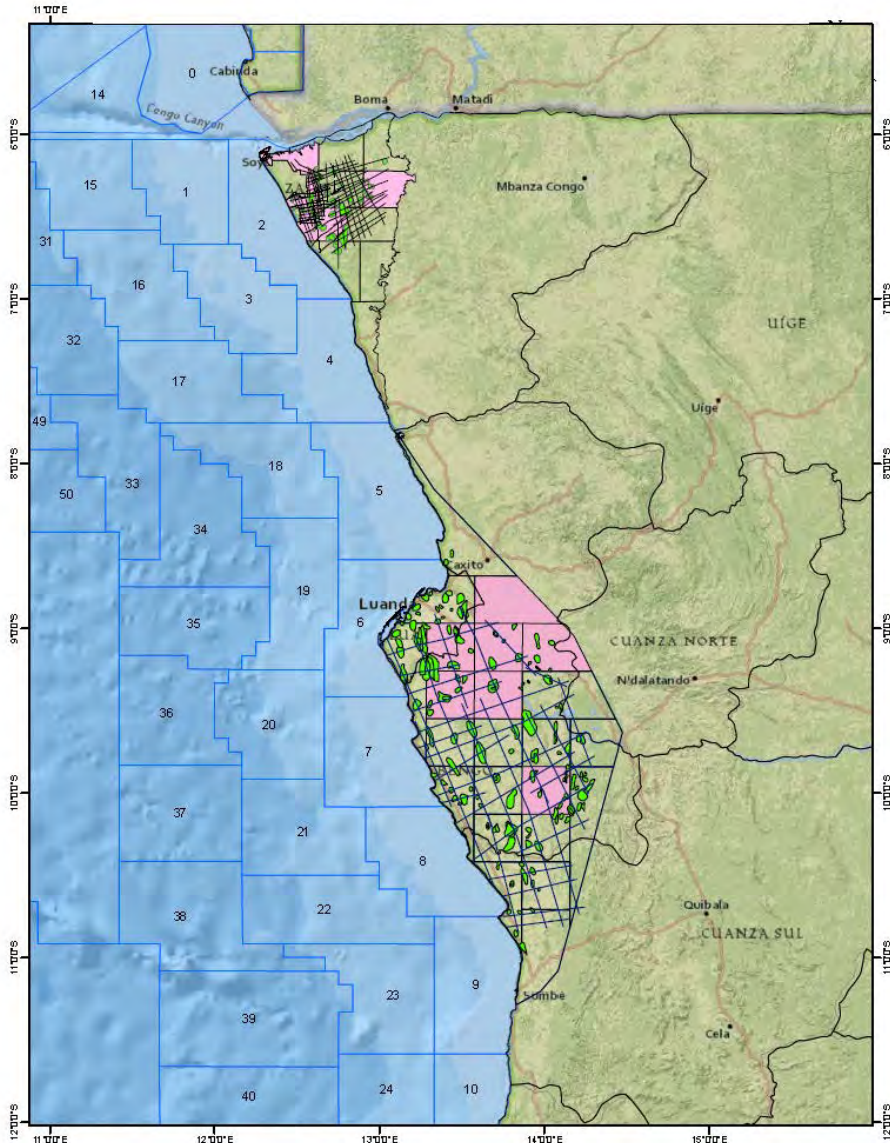
- ANGOLA'S ONSHORE BASINS REPRESENTS SIGNIFICANT REMAINING POTENTIAL IN ABOUT 5 MMBOIP, TAKING INTO CONSIDERATION THE ADJACENT ONSHORE DISCOVERIES OF CABINDA SOUTH (NOZ AND CASTANHA WELLS).
- THE ONSHORE KWANZA BASIN SHOWS A REMAINING POTENTIAL OF 10 BILLIONS BARRILS OF OIL RESOURCES, IN THE NEW SEISMIC DATA ACQUIRED.
- SINCE 2011 LARGE PRE-SALT OIL FIELDS DISCOVERIES HAVE BEEN MADE IN THE OFFSHORE KWANZA BASIN AS CAMEIA-1, AZUL-1, LONTRA-1, MAVINGA-1 AND BICUAR-1 WELLS.
- THE RECENTLY SEISMIC DATA ACQUIRED IN ONSHORE KWANZA AND LOWER CONGO BASINS, INDICATES SIGNIFICANT OUTSTANDING POTENTIAL IN THREE LITHOSTRATIGRAFIC UNITS, PRE-SALT, CRETACEOUS, AND TERTIARY.



ONSHORE BLOCKS FOR BID

IDIMA PIMENTA

SNL DEX-DAR



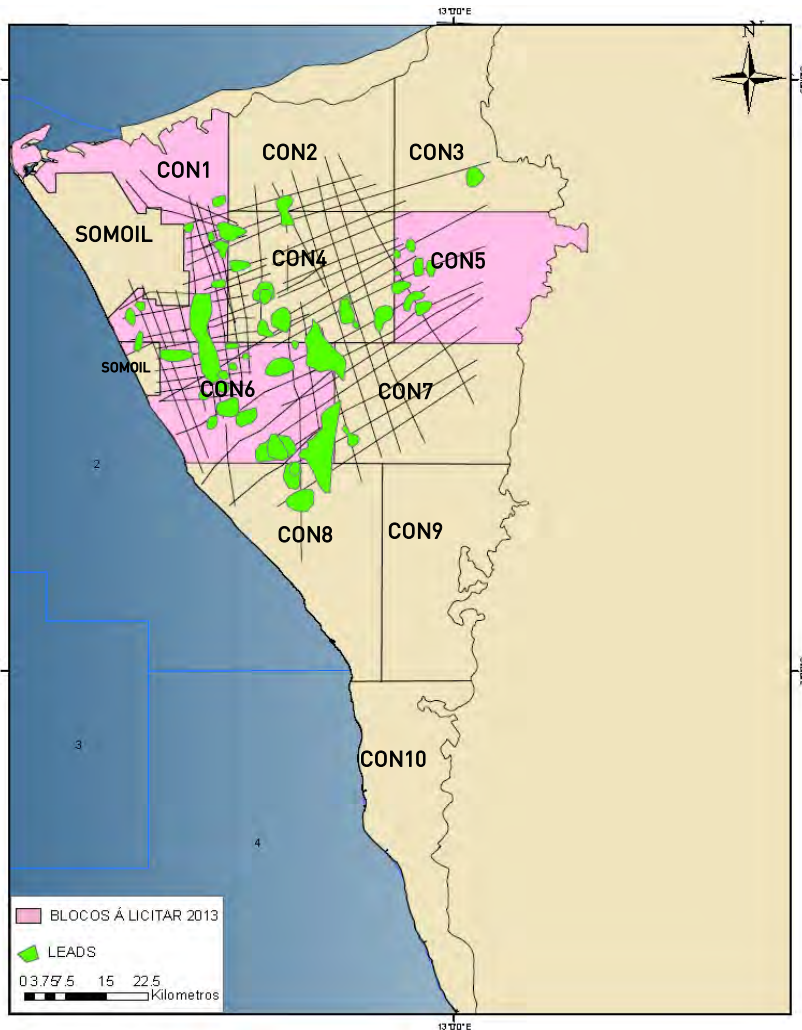
ONSHORE LOWER CONGO BASIN BLOCKS UP FOR BID

CON1, CON5, CON6

ONSHORE KWANZA BASIN BLOCKS UP FOR BID

**KON3, KON5, KON6, KON7, KON8,
KON9, KON17**

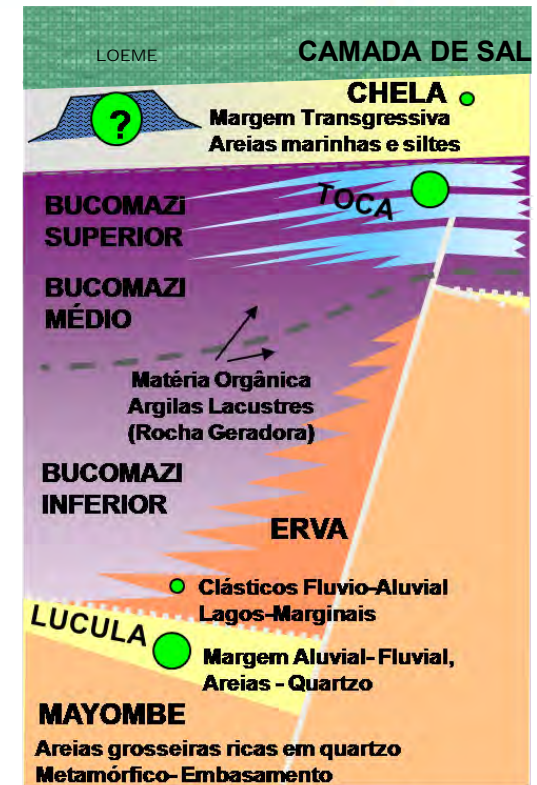
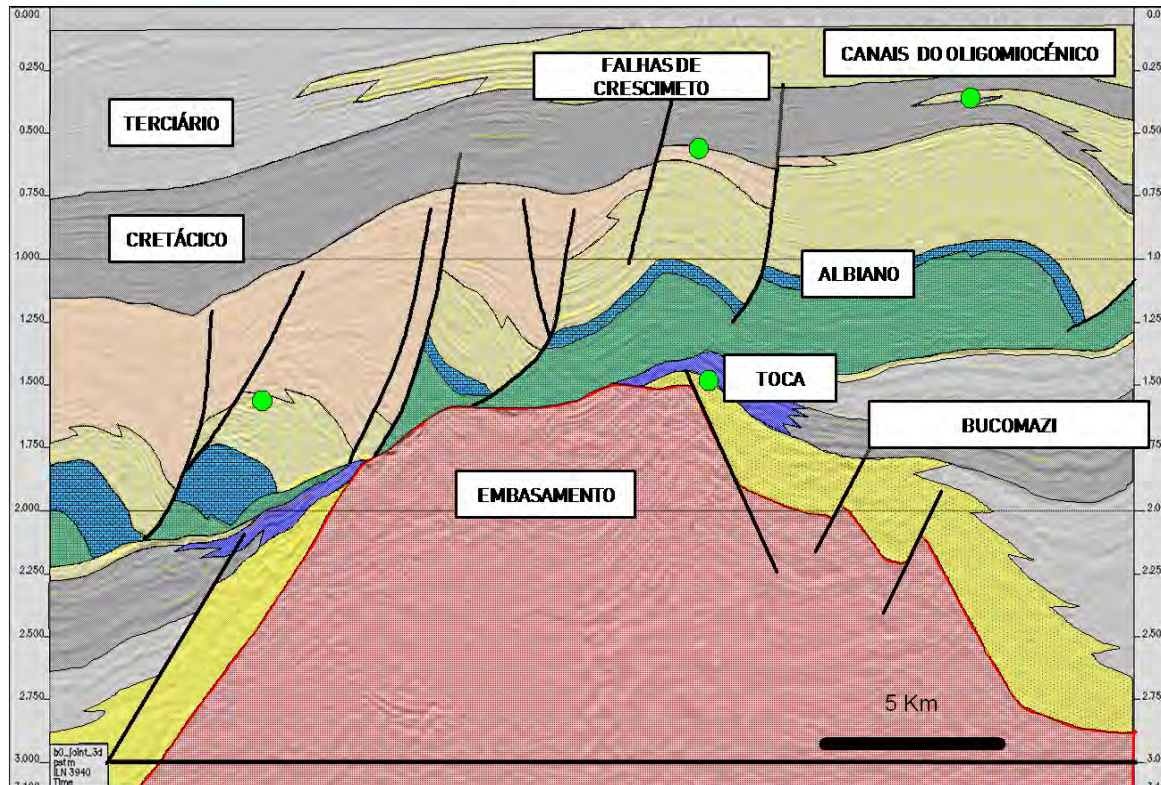
ONSHORE LOWER CONGO BASIN



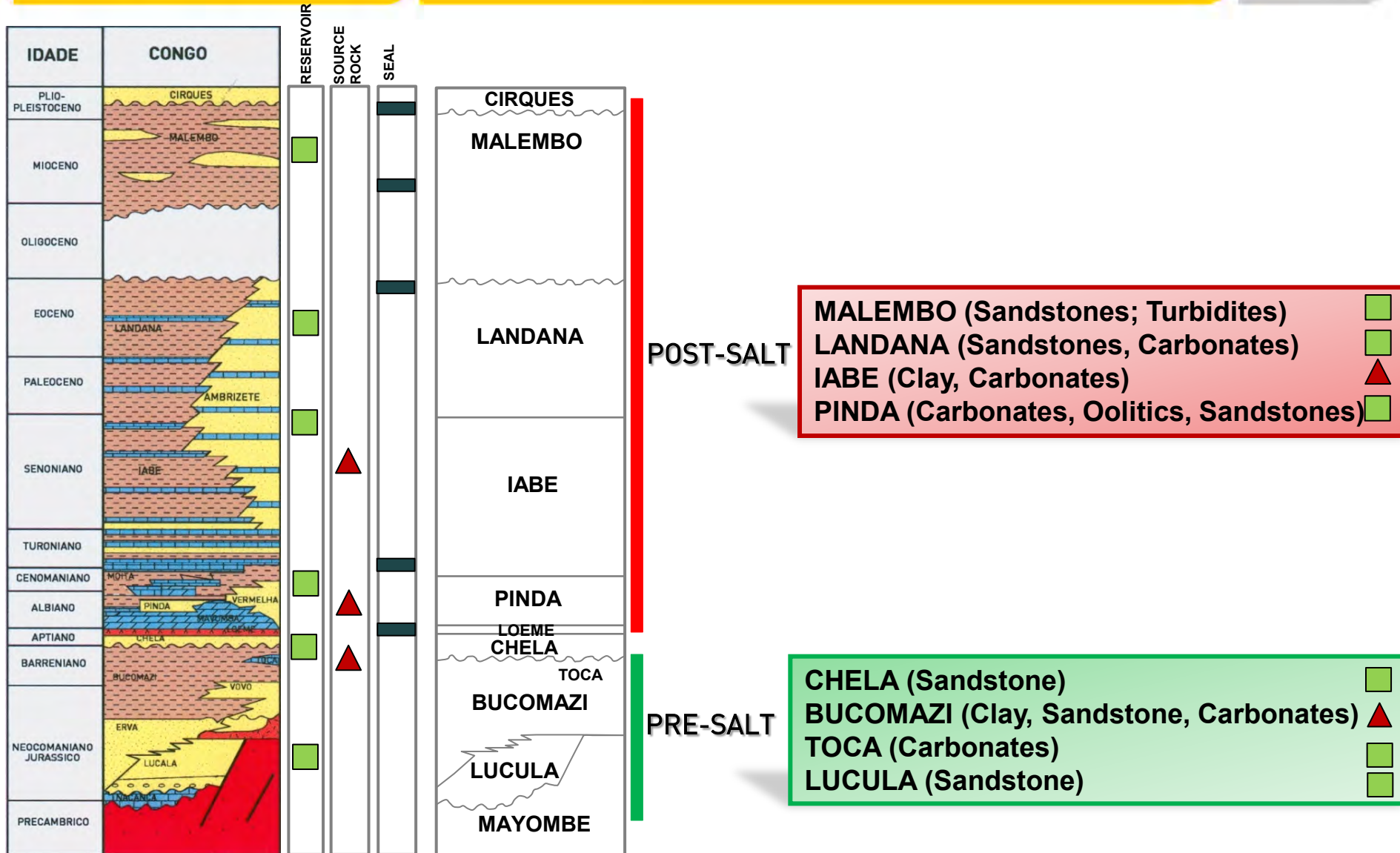
- THE LOWER CONGO BASIN IS A PASSIVE MARGIN, DUE TO THE SEPARATION OF THE SOUTH AMERICAN AND AFRICAN CONTINENTS DURING THE MESOZOIC PERIOD. IT IS LOCATED AT 3°20'S AND 7°30'S, BORDERED TO THE NORTH BY THE GABON BASIN AND TO THE SOUTH BY THE KWANZA BASIN, COVERING A GEOGRAPHIC AREA OF APPROXIMATELY 7.190 KM².
- EXPLORATION ACTIVITY IN THE BASIN STARTED IN 1960. THERE ARE CURRENTLY 150 EXPLORATION WELLS.

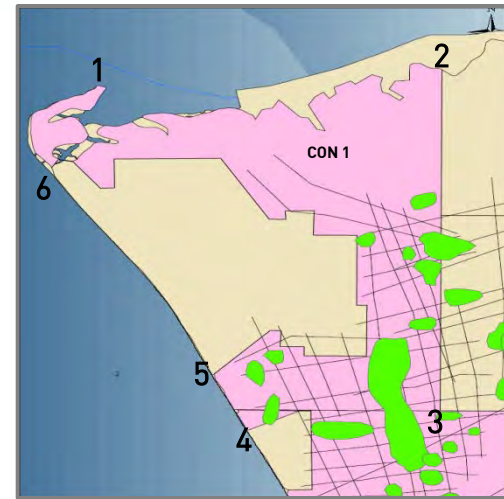
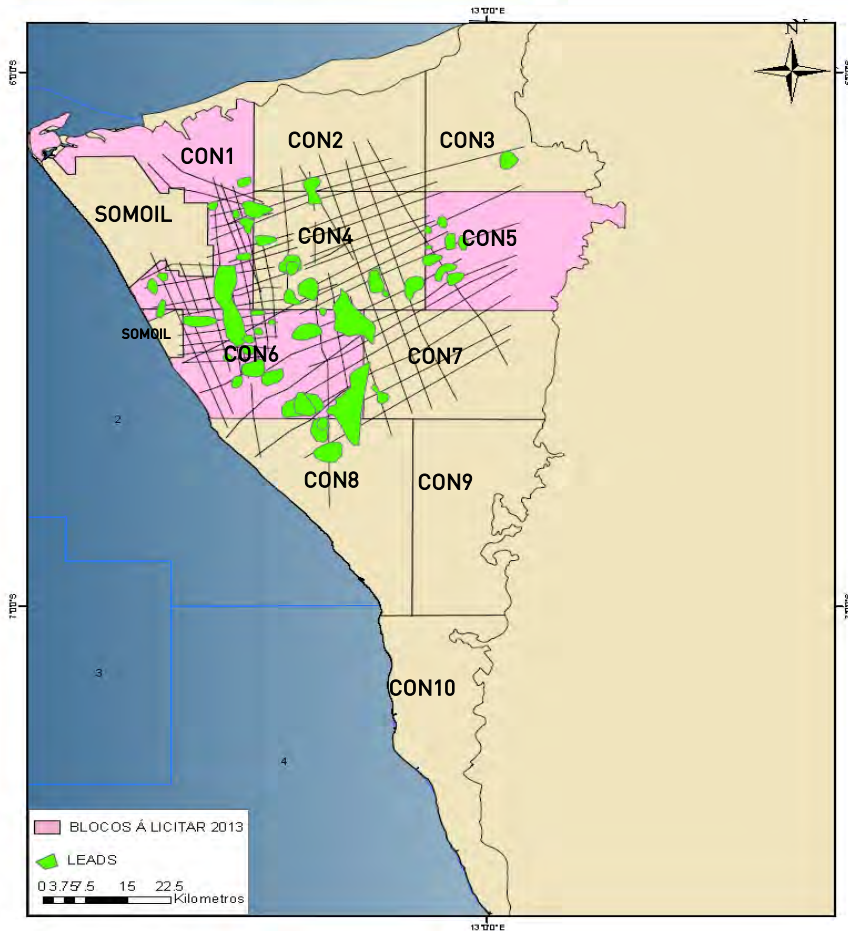
BLOCKS TO BID:
CON1, CON5, CON6

MAIN DISCOVERIES:
NGONDO
LUMUENO
LUELA
CABEÇA DA COBRA
QUELO



- THE REGIONAL GEOLOGICAL PROFILE SHOWS THAT THE PRE-SALT IN THE BASIN IS COMPOSED BY CONTINENTAL SEDIMENTS FROM THE RIFT (LUCULA) PHASE, AND CONTINENTAL TO MARINE SEDIMENTS FROM THE TRANSITIONAL PHASE (BUCOMAZI AND CHELA). POST-SALT IS CHARACTERIZED BY MARINE ENVIRONMENT WITH CARBONATE SEDIMENTS (ALBIANO), FOLLOWED BY CLASTIC SEDIMENTS (IABE AND LANDANA) AND TURBIDITES (MALEMBO).
- TECTONISM LED TO ERRADICATED FAULTS IN THE BASEMENT AND FORMATION OF HORSTS AND GRABENS DURING THE RIFT PHASE. THE TECTONIC REACTIVATION GENERATED LISTRIC FAULTS DURING ALBIANO AND CRETACEOUS.



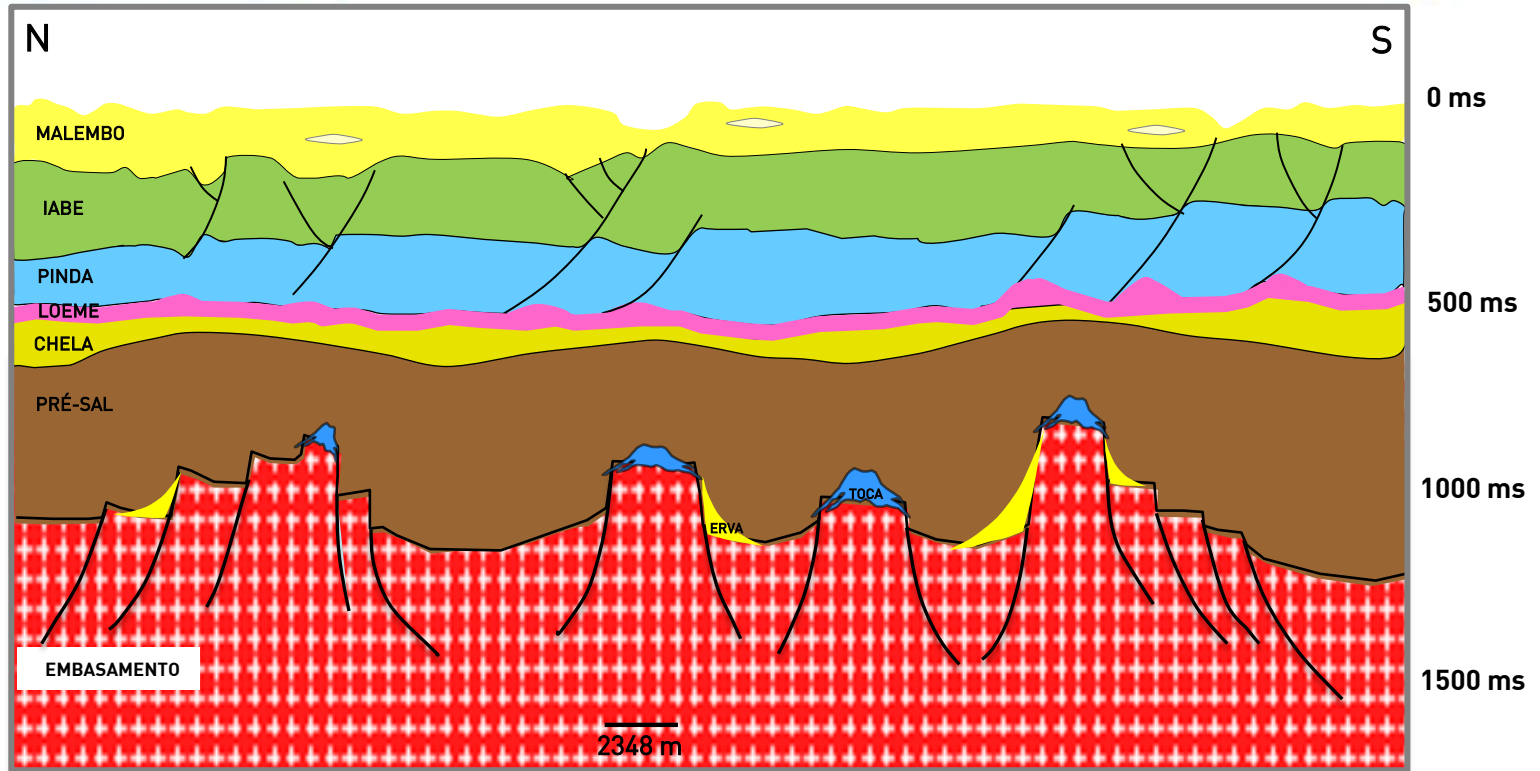


Points	Latitude S	Longitude E
1	6°09'41"	12°18'25"
2	6°03'00"	12°36'7"
3	6°03'26"	12°37'54"
4	6°26'36"	12°37'47"
5	6°26'36"	12°27'16"
6	6°24'07"	12°26'03"

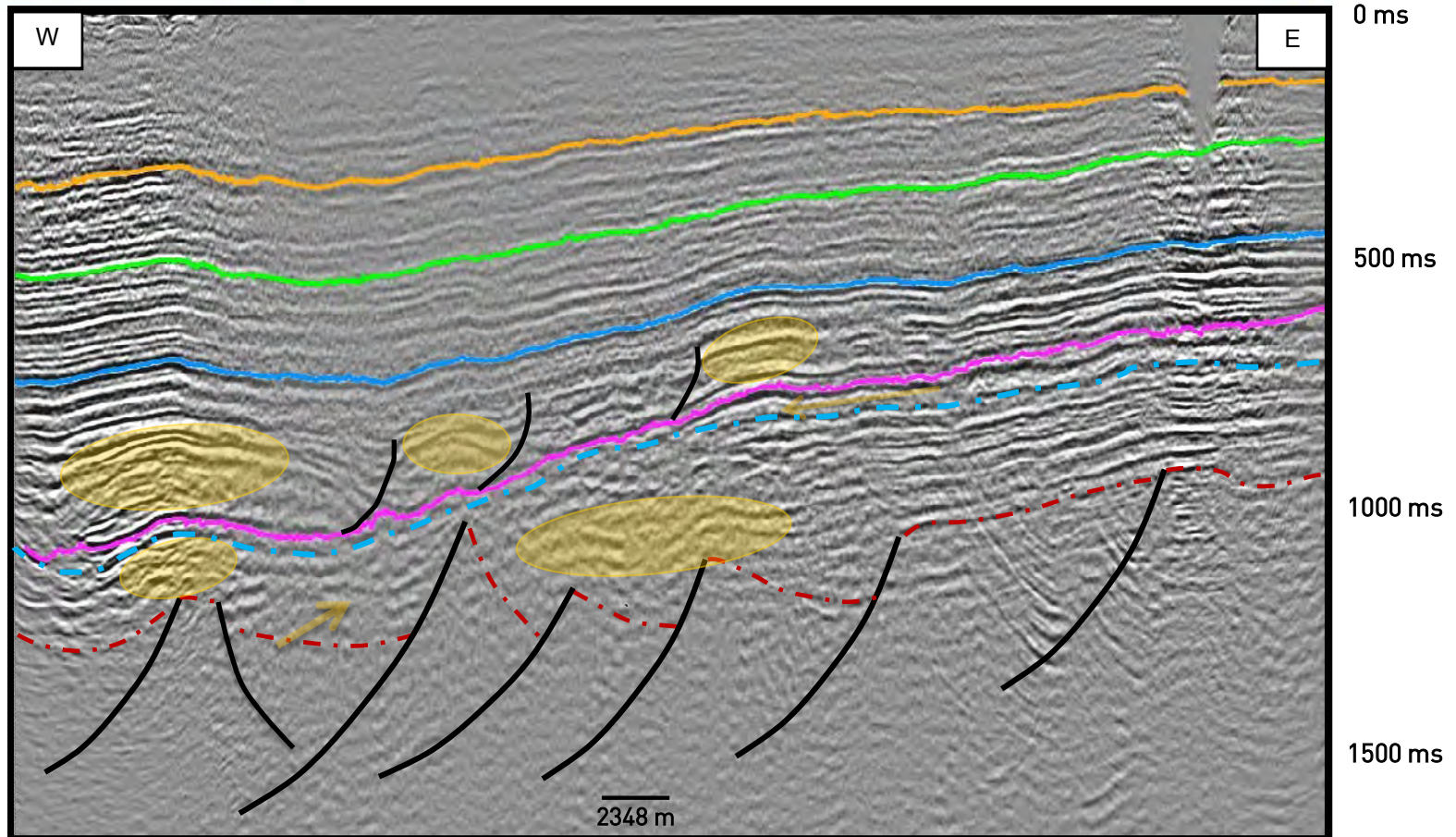
AREA: 739.72 KM²

TOTAL SEISMIC ACQUIRED: 594.178 KM 2D

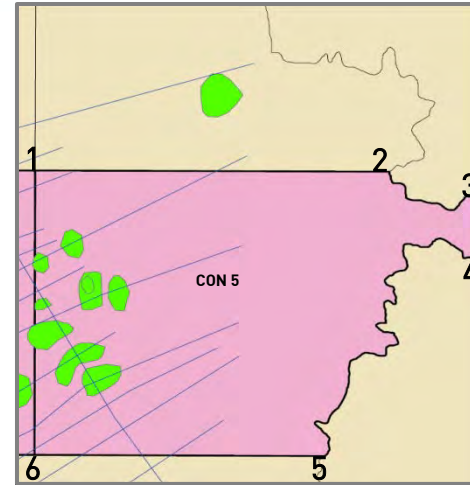
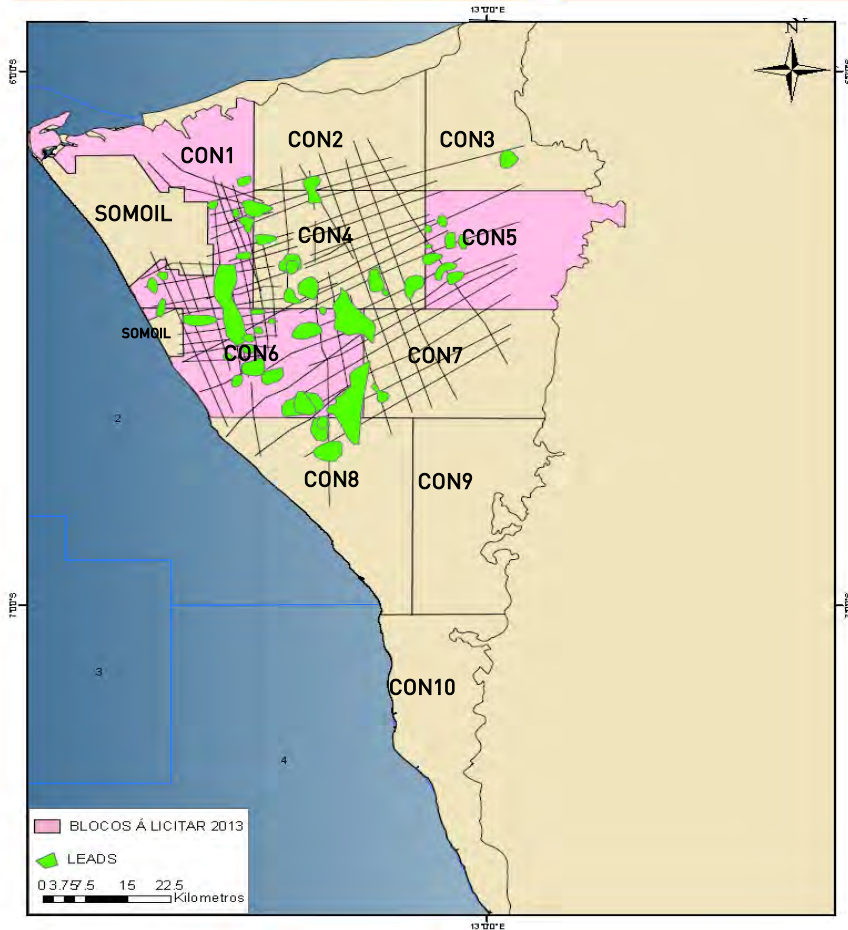
TOTAL COVERAGE OF AEROMAGNETIC DATA (AVAILABLE)



- THE EXPLORATORY POTENTIAL, IN THE PRE-SALT, CAN BE FOUND IN THE LUCULA SANDS DEPOSITED AT THE BOTTOM OF THE GRABENS, FOLLOWED BY THE ERVA FM IN THE FLANKS OF CRUSTAL ELEVATIONS, TOCA FM ON TOP OF THE HORSTS AND CHELA SANDS IN THE SAG PHASE. IN RESPECT TO THE POST-SALT PINDA RAFTS (SOMOIL PRODUCTION) AND TURBIDITES OF MALEMBO FORMATION.



- THE BLOCK SHOWS POTENTIAL IN THE PRE-SALT CARBONATES RESERVOIRS OF TOCA FORMATION ON BASEMENT HIGHS, THE ERVA SANDS PINCHING-OUT ON HORSTS FLANKS AND THE CHELA IN SAG PHASE.
- POST-SALT REPRESENTS A LOT OF POTENTIAL IN THE CARBONATES PINDA RAFTS

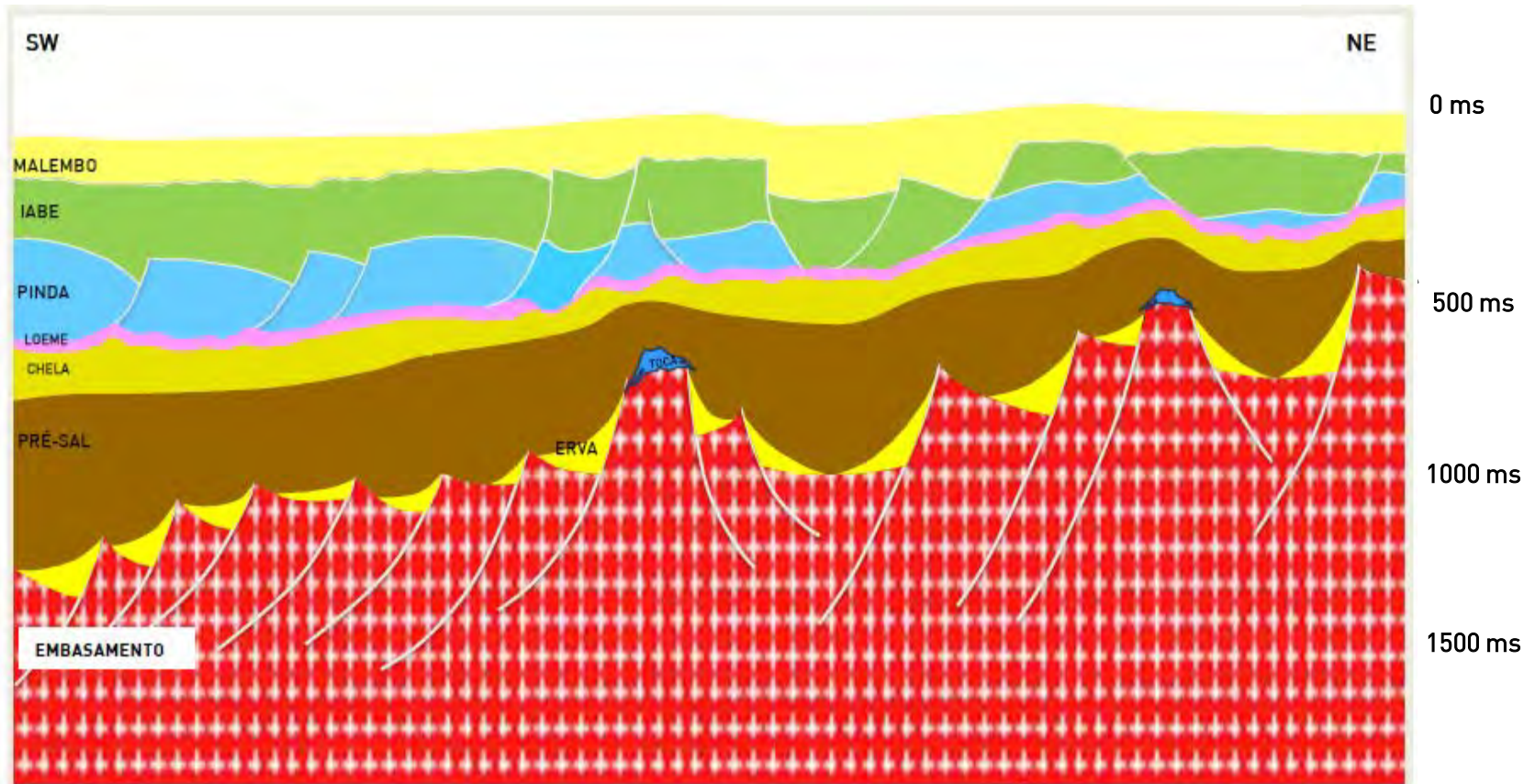


Points	Latitude S	Longitude E
1	6°13'24"	12° 54'15"
2	6°13'28"	13° 09'17"
3	6°14'35"	13° 12'49"
4	6°17'26"	13° 13'9"
5	6°26'43"	13°6'33"
6	6°26'4"	12°54'15"

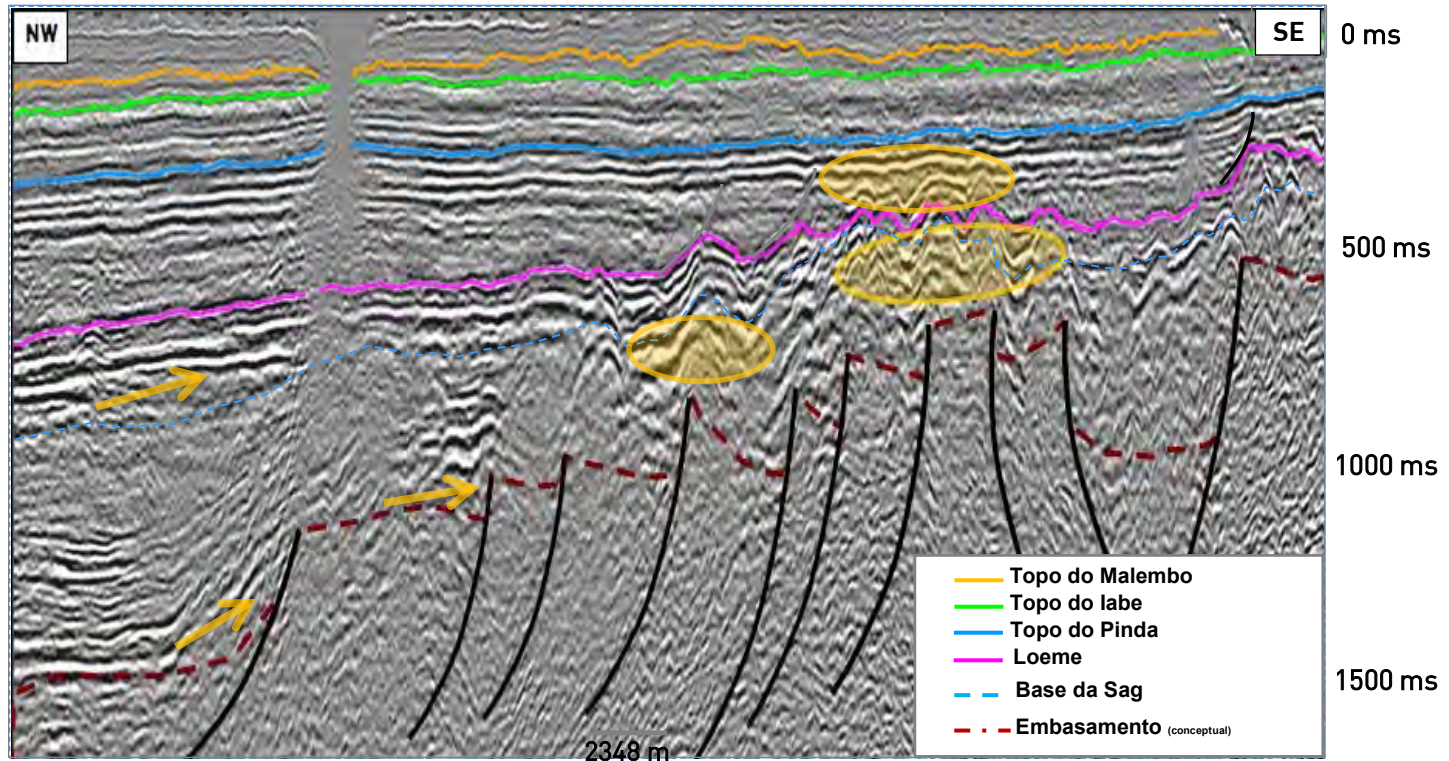
AREA: 683.29 Km²

TOTAL SEISMIC ACQUIRED: 154.377 Km 2D

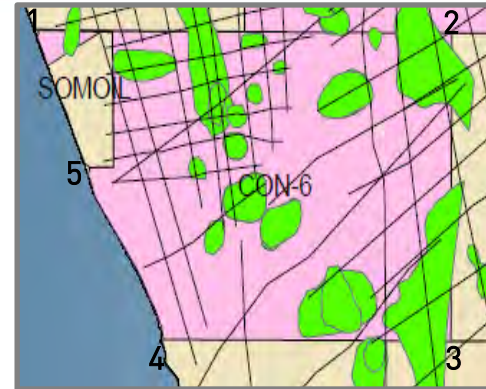
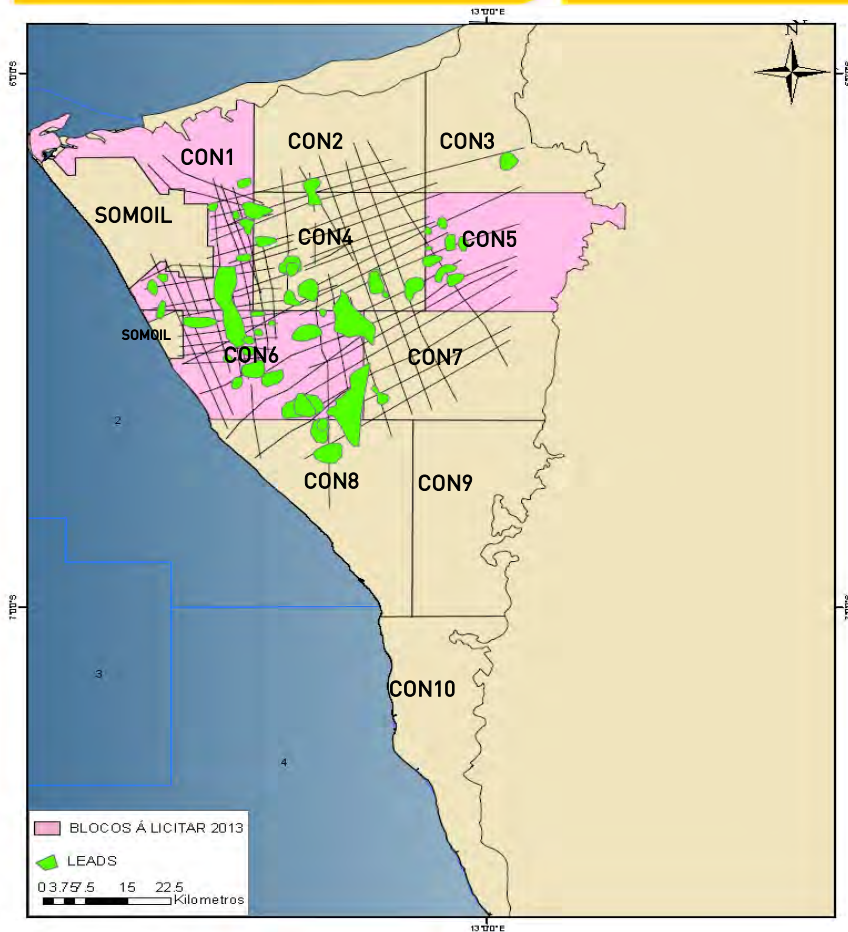
TOTAL COVERAGE OF AEROMAGNETIC DATA (AVAILABLE)



- THE GEOLOGICAL PROFILE REPRESENTS THE REGIONAL CONTEXT OF THE BLOCK. THE PRE-SALT IS FORMED BY HORSTS AND GRABENS.
- THE POST-SALT IS CHARACTERIZED BY MIXED CARBONATE TRAPS IN PINDA, ASSOCIATED WITH NORMAL LISTRIC FAULTS CAUSED BY SALT TECTONIC.



- GREAT POTENCIAL AT THE PRE-SALT IN THE LUCULA, ERVA, TOCA CARBONATES FORMATION AND CHELA SANDS FROM THE SAG PHASE.
- IN THE POST-SALT, THE POTENTIAL IS IN THE CARBONATES RESERVOIRS OF PINDA IN THE ALBIAN, AT THE UPPER CRETACEOUS .

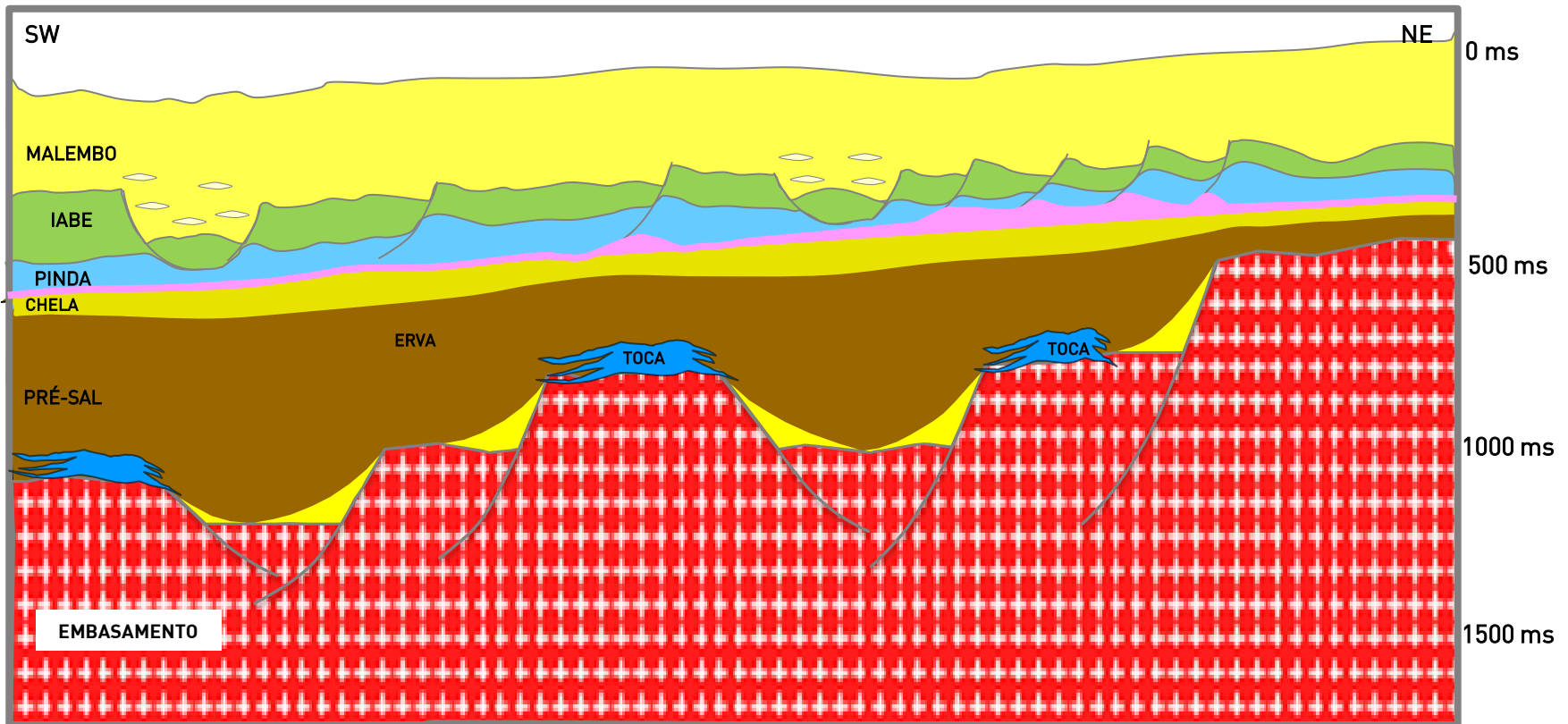


Points	Latitude S	Longitude E
1	6° 26'39"	SEA LEVEL
2	6° 26'39"	12° 48'18"
3	6° 38'59"	12° 48'18"
4	6° 38'59"	SEA LEVEL
5	6° 32'02"	12° 29'51"
6	6° 32'02"	12° 30'57"
7	6° 26'39"	12° 30'57"
8	6° 26'39"	12° 30'27"
9	6° 27'46"	12° 27'47"

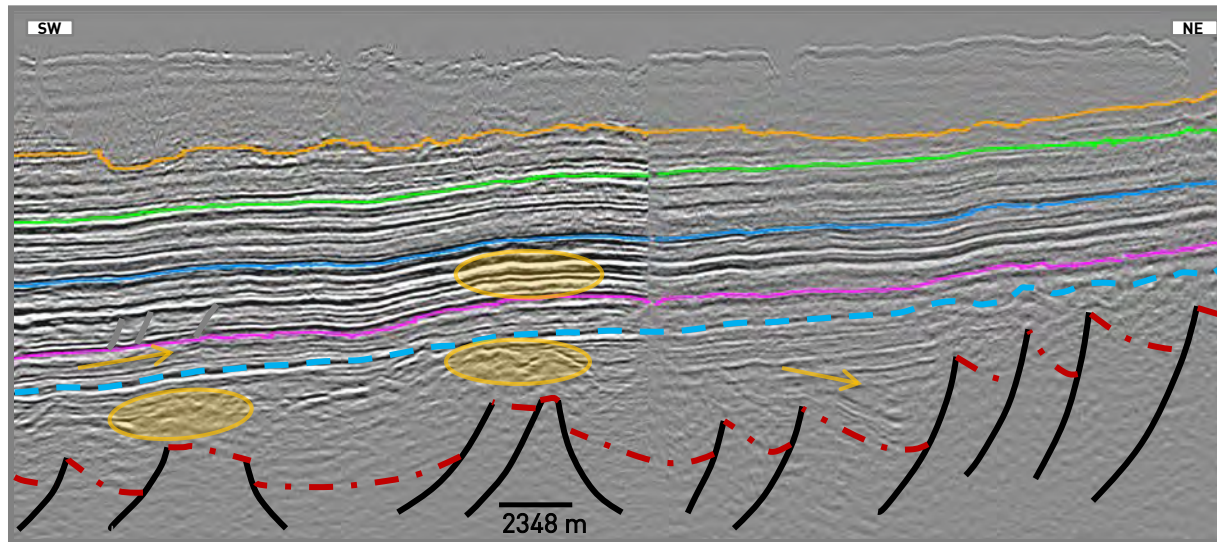
AREA: 740.90 KM²

TOTAL SEISMIC ACQUIRED: 397.783 KM 2D

TOTAL COVERAGE OF AEROMAGNETIC DATA (AVAILABLE)

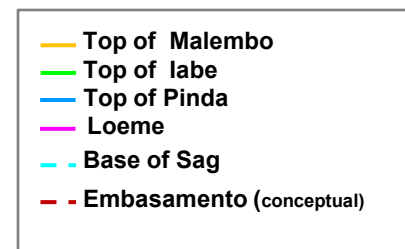
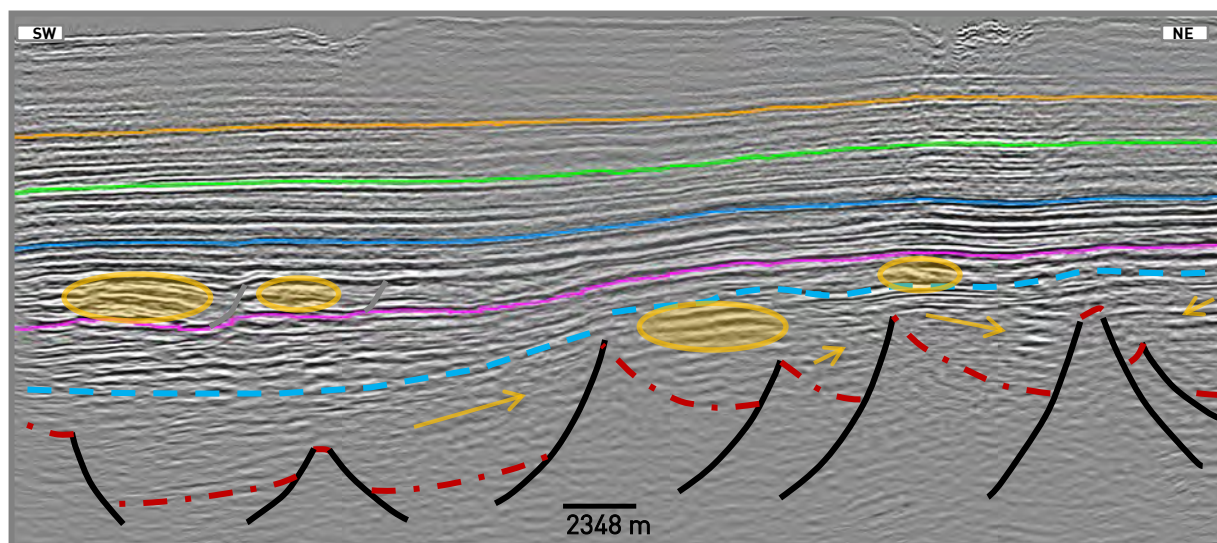


▪ THE GEOLOGICAL PROFILE REPRESENTS THE STRUCTURAL CHARACTERISTIC OF THE PASSIVE MARGIN WITH THE PRESENCE OF HORTS AND GRABENS IN THE PRE-SALT; DEVELOPMENT OF ALBIAN CARBONATES IN THE UPPER CRETACEOUS IN THE POST-SALT.



▪ LEADS WERE IDENTIFIED AT THE PRE-SALT LEVEL, IN THE ERVA FM AND CHELA SANDS OF THE SAG PHASE.

▪ THE POST-SALT SHOWS POTENTIAL IN THE CARBONATE RAFTS OF THE PINDA FORMATION DEPOSITED DURING THE ALBIAN PERIOD.



BLOCKS	PLAY	PROVISIONAL RESOURCES (MMBO)
CON1	POST -SALT PRE-SALT	750
CON5	POST- SALT PRE-SALT	910
CON6	POST -SALT PRE-SALT	1.150
TOTAL	POST -SALT PRE-SALT	2.810

- **THE HIGH POTENTIAL OF THE PRE AND POST SALT PLAY HAVE BEEN PROVEN, WITH VISIBLE THICKNESS IN THE SEISMIC AND EVIDENCES OF HIDROCARBON;**
- **PINDA IS A KNOWN PLAY, TESTED IN THE LOWER CONGO BASIN;**
- **THE RESERVOIRS IN THE CHELA, ERVA AND TOCA FORMATION, SHOWS EVIDENCE OF HIDROCARBON; THE REGIONAL STAMP OF THE LOEME FORMATION AND THE MAIN SOURCE ROCK IS THE PRE-SALT (QUELO-1) BUCOMAZI FORMATION;**
- **THE ACQUISITION OF NEW GRAV/MAG AND SEISMIC DATA IS NEEDED FOR THE EXPLORATION OF THE AREA.**



LIBONGOS, BINGA FORMATION

JANICE CARDOSO
DEX/DGC

THE PROJECT MAIN GOAL CONSISTS OF STUDYING THE 23 BLOCKS OF THE ONSHORE KWANZA BASIN FOLLOWING THESE SPECIFIC TOPICS:

- a) TO IDENTIFY THE EFFECTIVE SOURCE ROCKS AND CONSEQUENTLY TO DEFINE THE BASIN MATURATION MODEL
- b) TO IDENTIFY SUPERFICIAL INDICES OF HYDROCARBONS AND SUBSEQUENTLY TO DEFINE THEIR ORIGIN AND MIGRATION PATHWAYS

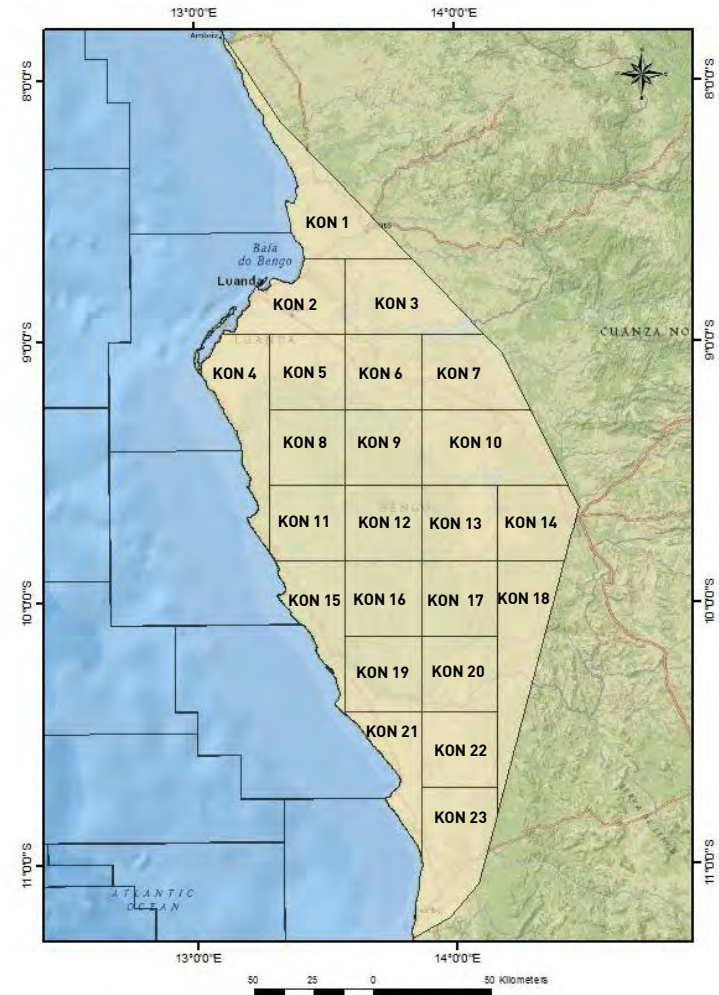


FIGURE 1 - LOCATION OF THE KWANZA BASIN (SONANGOL/DEX, 2014)

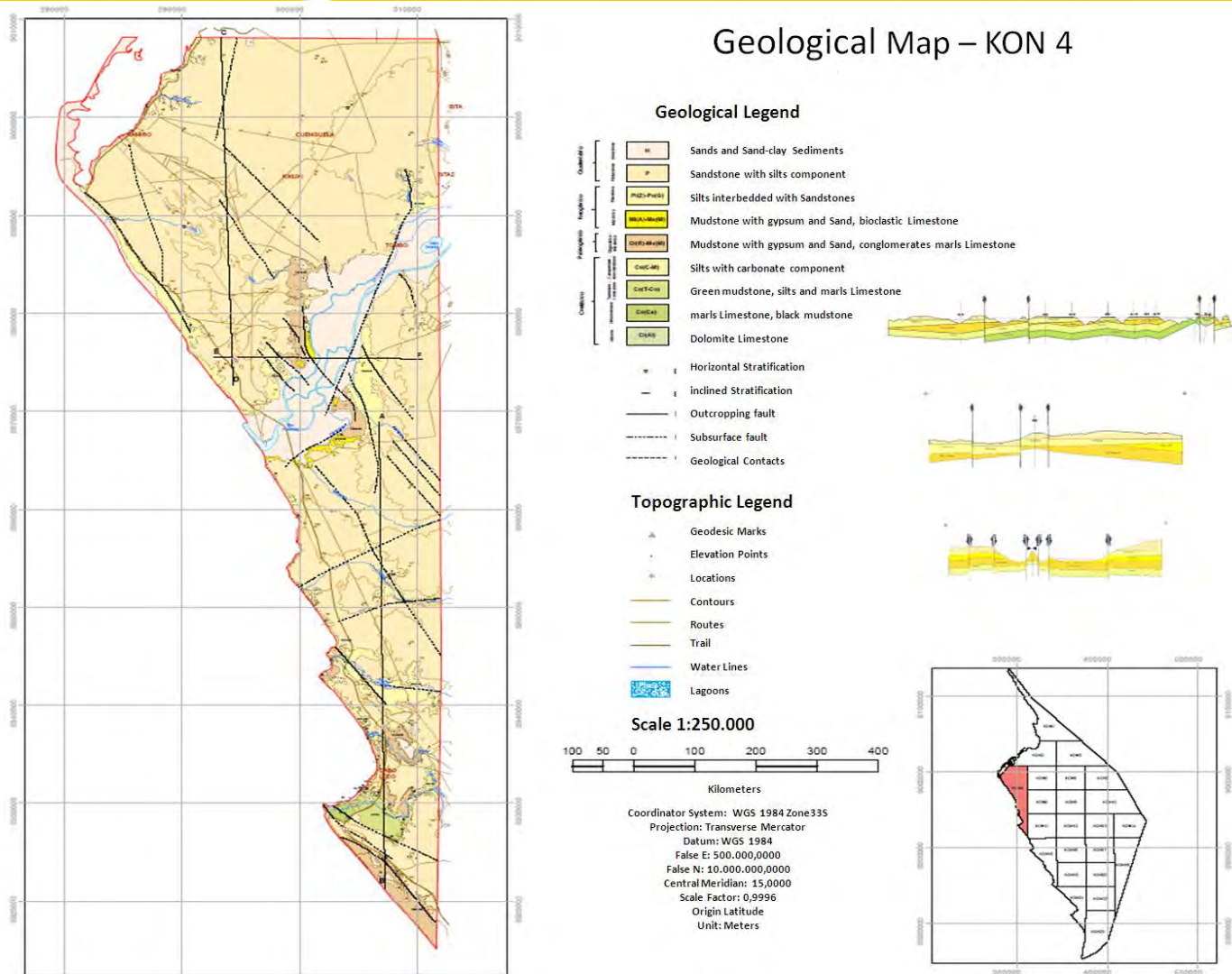
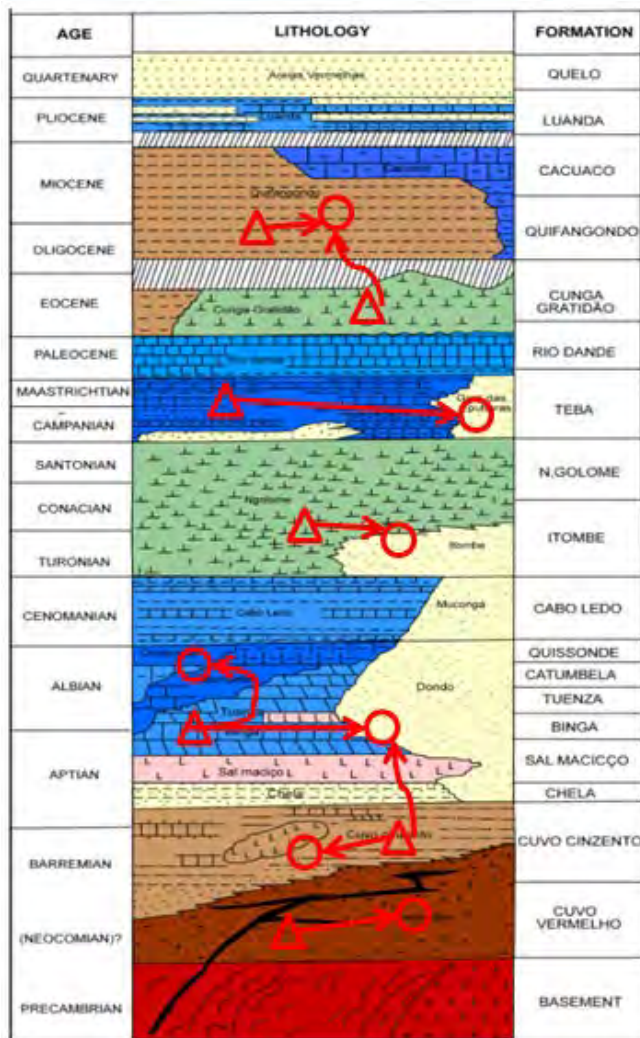


FIGURE 2: BLOCK KON 4 (OBRANGOL/2013)



SOURCE ROCKS IDENTIFIED IN BOTH PRE-SALT AND POST-SALT UNITS

1999 – SONANGOL AND PARTNERS ASSESS 11 WELLS GEOCHEMICALLY

2003 – PUBLISHED GEOCHEMICAL RESULTS FOR THE CUVO, BINGA, ITOMBE – TEBA AND CUNGA FORMATIONS

2009 - SONANGOL AND PARTNERS ANALYSED CUTTINGS AND CORE SAMPLES FOR MORE THAN 30 WELLS.



FIGURE 3 - STRATIGRAPHIC COLUMN OF THE ONSHORE KWANZA BASIN

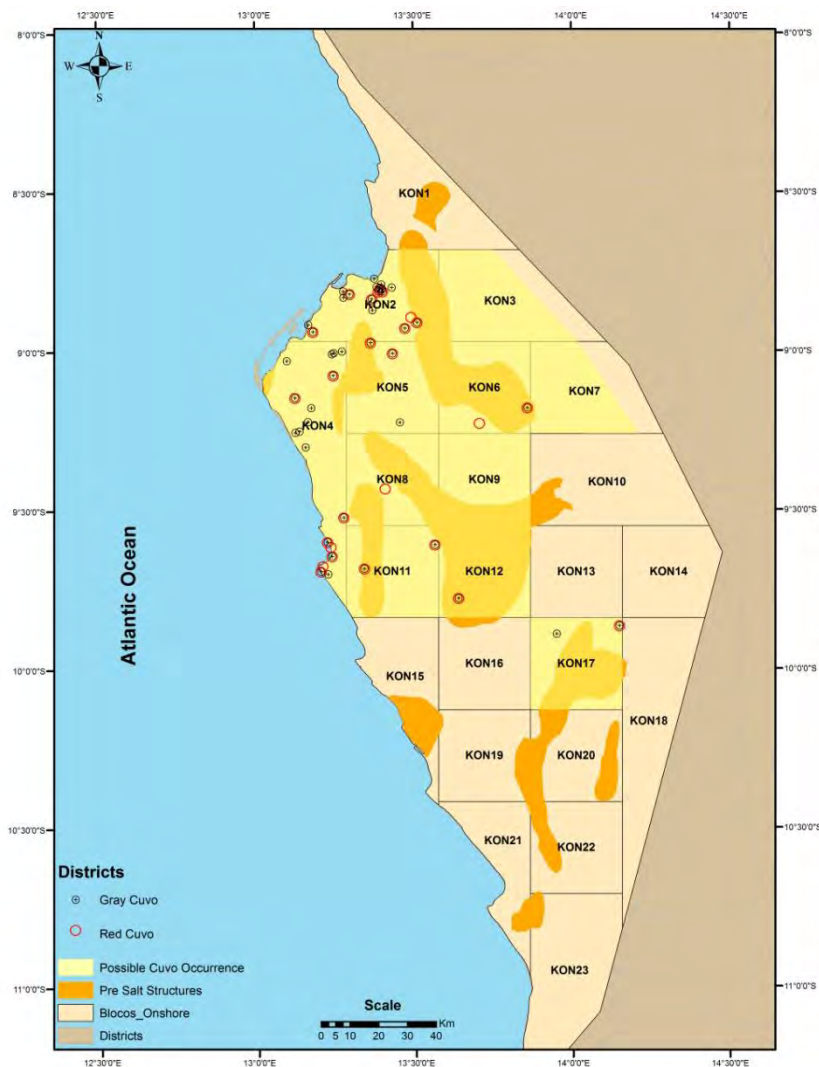


FIGURE 4 - OCCURENCE MAP OF CUVO FORMATION

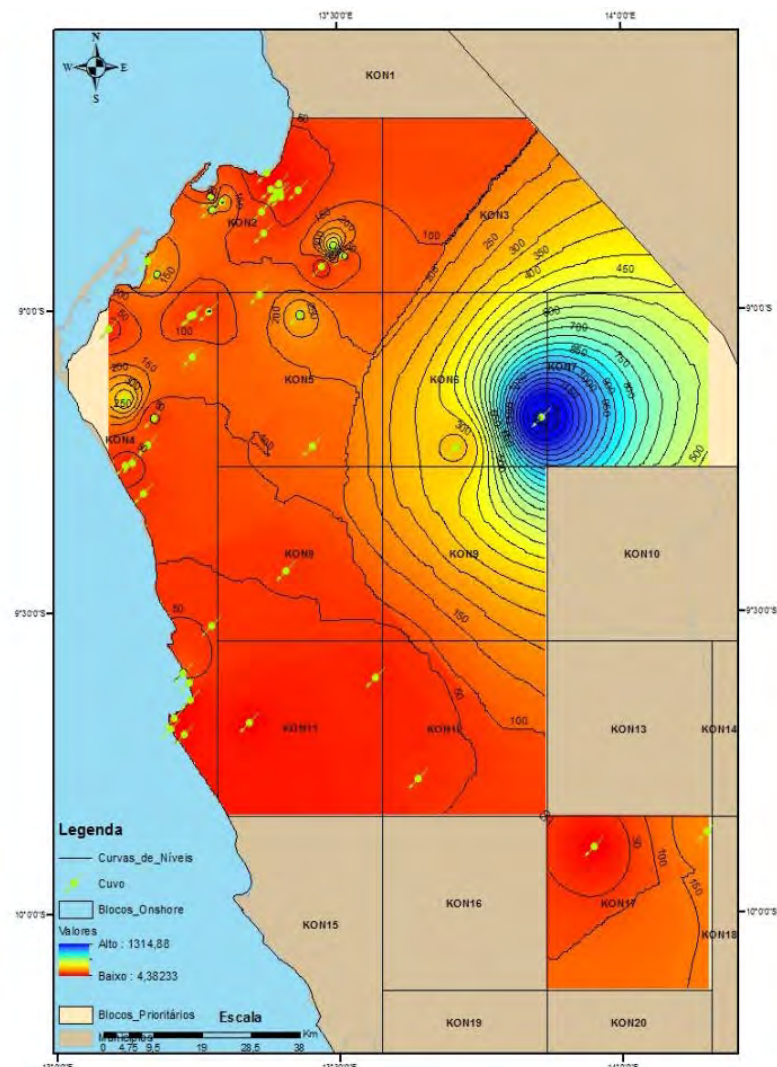
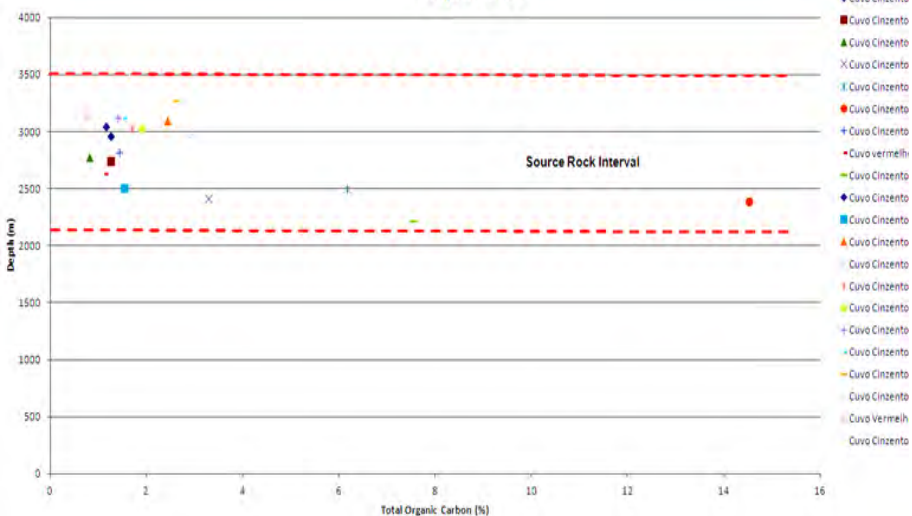
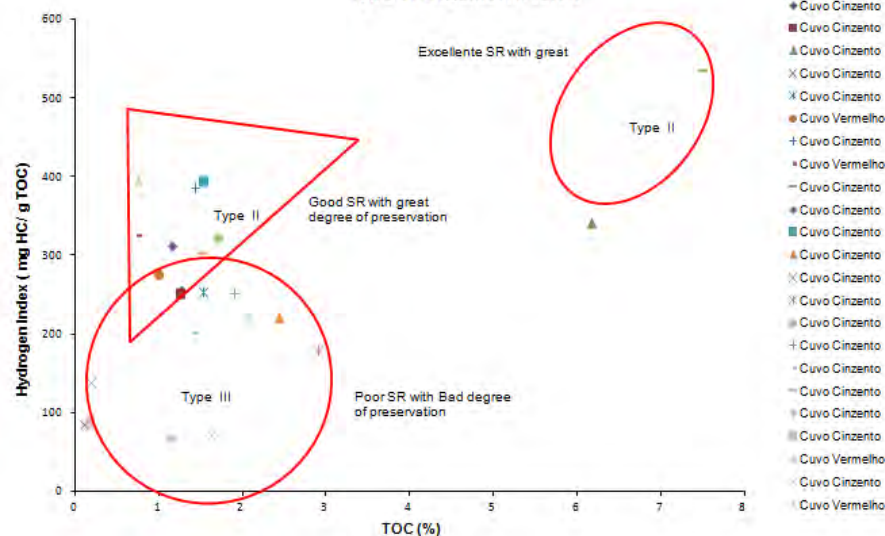


FIGURE 5 - ISOBACH MAP OF CUVO FORMATION

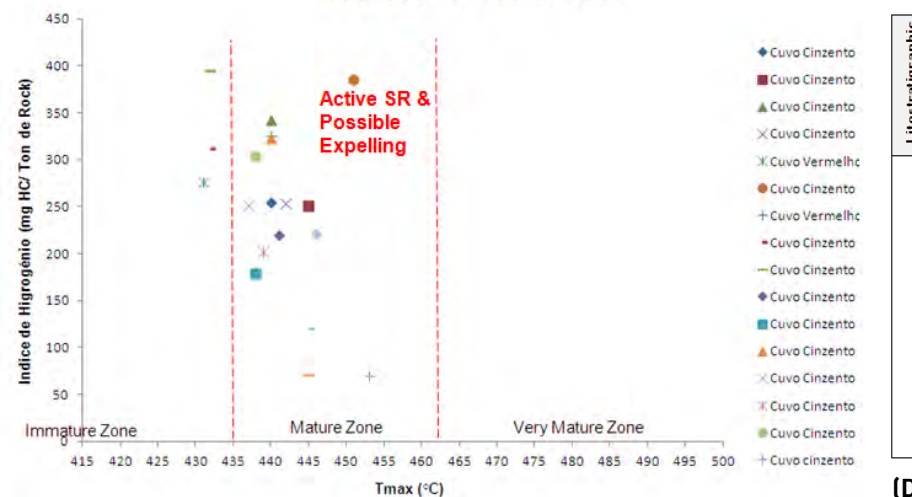
Depth vs TOC



Type of Organic Material



Maturation of Source Rock



BIOMARKER ANALYSES

Litostratigraphic Unity	Field	KON	Wells	Formation	Depth (m)	Type of Samples												Depositional Environment
						Sample	%API	%S	%Saturates	%Aromatics	%NSO	Pr/Ph	Pr/Cn17	Ph/Cn18	Ts/Ts+Tm	Gamacerano (ppm)		
Pre Salt	Cacuace	2	CC-2	Grey Cuvo	2484 - 2487	Oil	28	0.2	50	35	6	1.4	0.6	0.6	0.9		Fluvio - Lacustre	
	Puaça	4	PU-2		2604 - 2620	Oil	39					1.7	1.4	1.0	0.2	0.23		
	Caba - Ledo	4	CL-2B		2213 - 2221	Cutting							1.2	4.5	4.5	0.2		0.23
	Uacongo	4	UA-3		3036 - 3044	Oil	30						1.9			0.5		0.15

(DATA FROM G & G WELL REPORTS , SONANGOL/ENI, NOPEC/ PETRANGOL/ LABOFINA)

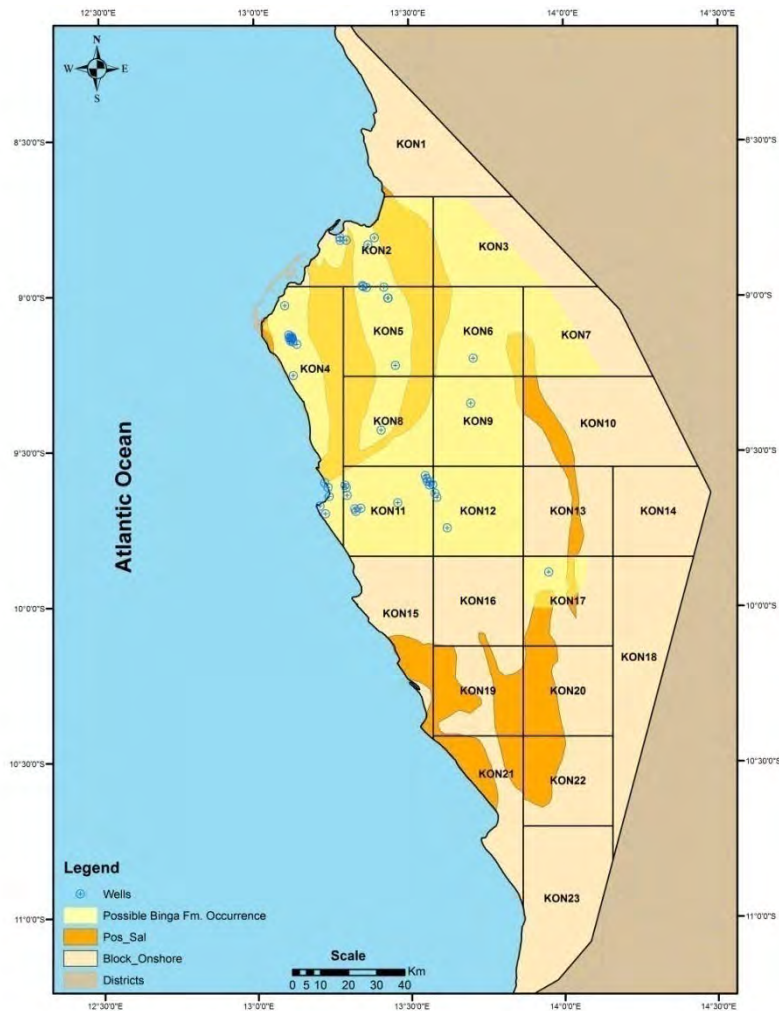


FIGURE 6: OCCURRENCE OF THE BINGA FORMATION

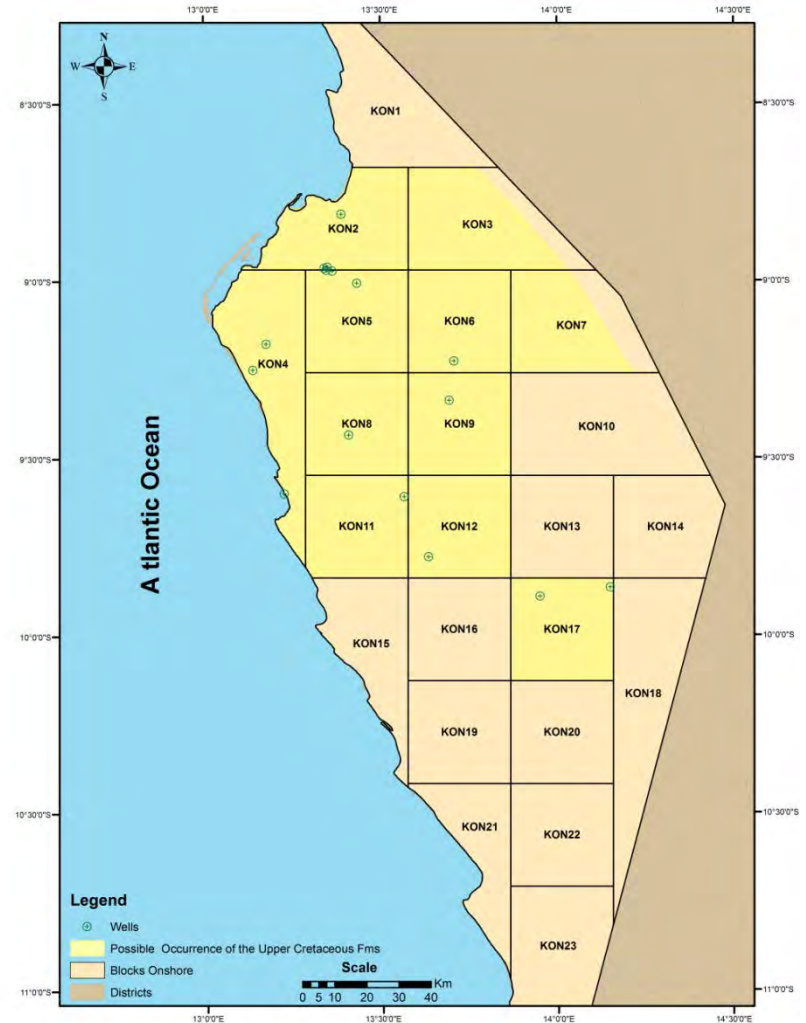
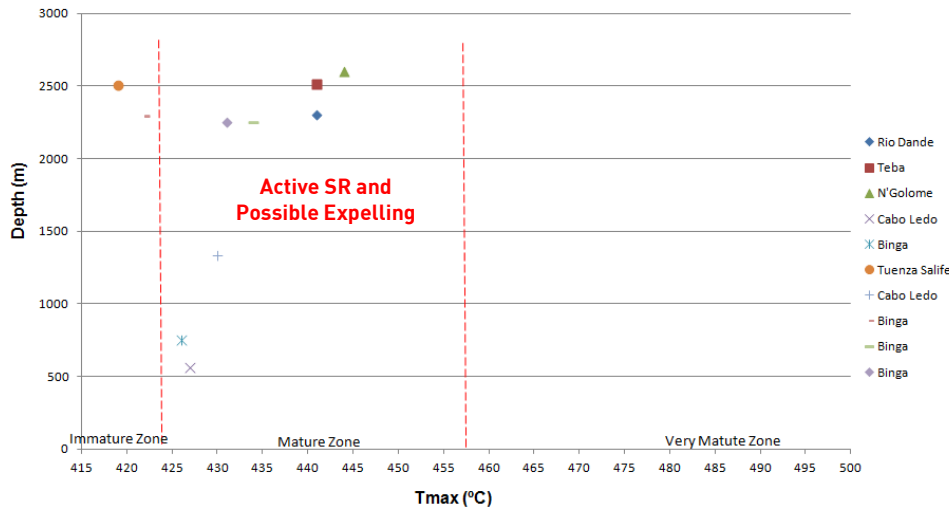
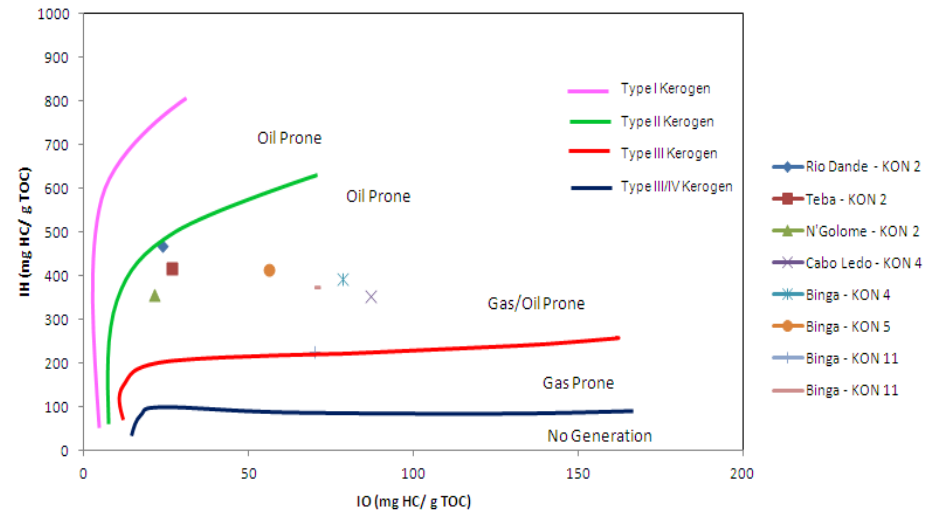


FIGURE 7: OCCURRENCE OF THE UPPER CRETACEOUS FORMATION (CABO LEDO, N'GOLOME, ITOMBE, TEBA)

Maturation of Source Rock



Pseudo - Van Krevelen Diagram



BIOMARKERS ANALYSES

Lithostratigraphic unit	KON	Well	Formation	Depth (m)	Type of Analysis	Sample	%API	%S	%Saturated	%Aromatics	%NSO	Pr/Ph	Pr/Ca17	Ph/Ca18	Ts/Ts+Tm	6-monoaromatic/ppm	Depositional Environment
Cretaceous	2	Luanda-3	Cabo Ledo		Chromatography	Oil	27.7	0.2	67.9	29.3	6.7	1.76	0.63	0.44			Mature and Transitional
	2	Bento-2	Binga				24		42.60	29.10	16.10	1.27	0.93	0.84			Mature and Transitional
	2	Cocueco-9	Teba				31		46.74	39.39	9.26	1.40	0.66	0.66			Mature and Transitional
	4	Benfios-14	Binga	2642-2668			28.6	0.82	40.1	46.6	7.3	1.22	1.1	1.11		0.1	Transitional
	6	Zango-4	Binga	2296					69			0.69	3.71	6.22			Marine
	12	Galinde-4	Binga				29.3	0.72	42	46.4	6.4	1.2	1.08	1.03			Marine

(DATA FROM G & G WELL REPORTS , SONANGOL/ENI, NOPEC/ PETRANGOL/ LABOFINA)

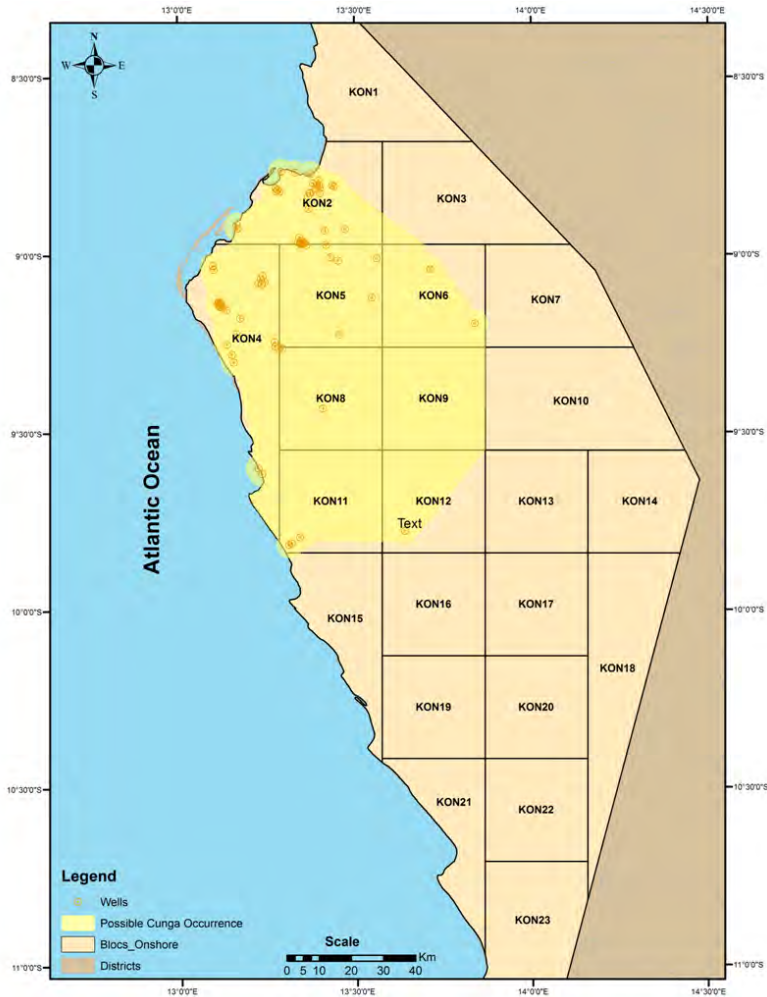


FIGURE 8: OCCURENCE OF THE CUNGA FORMATION

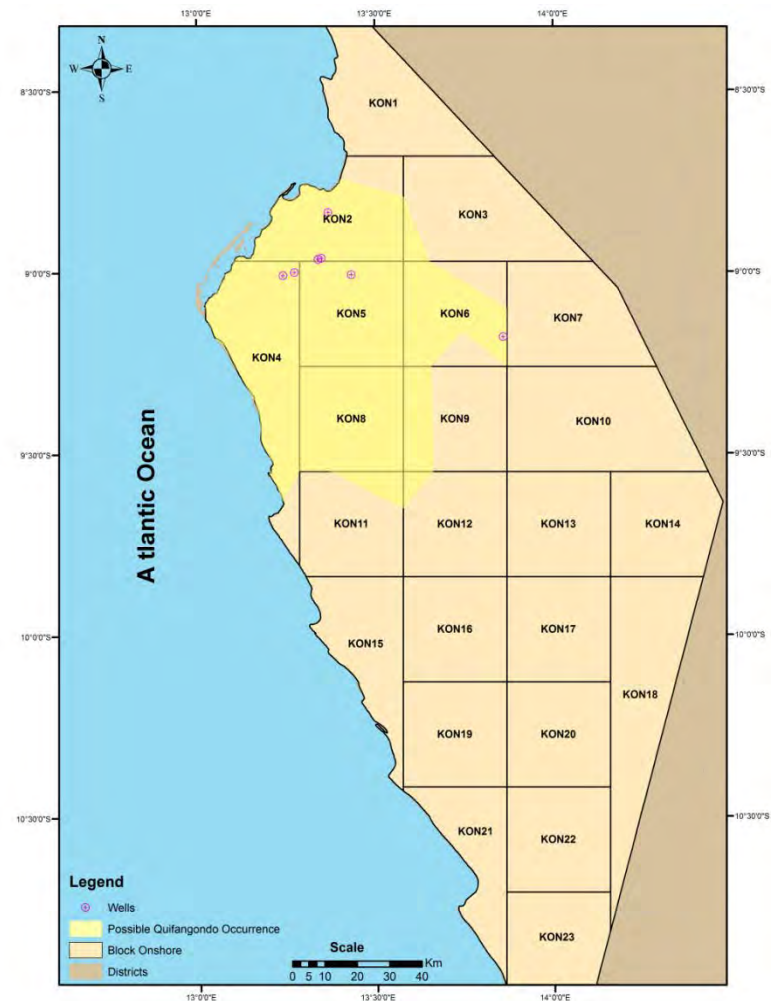
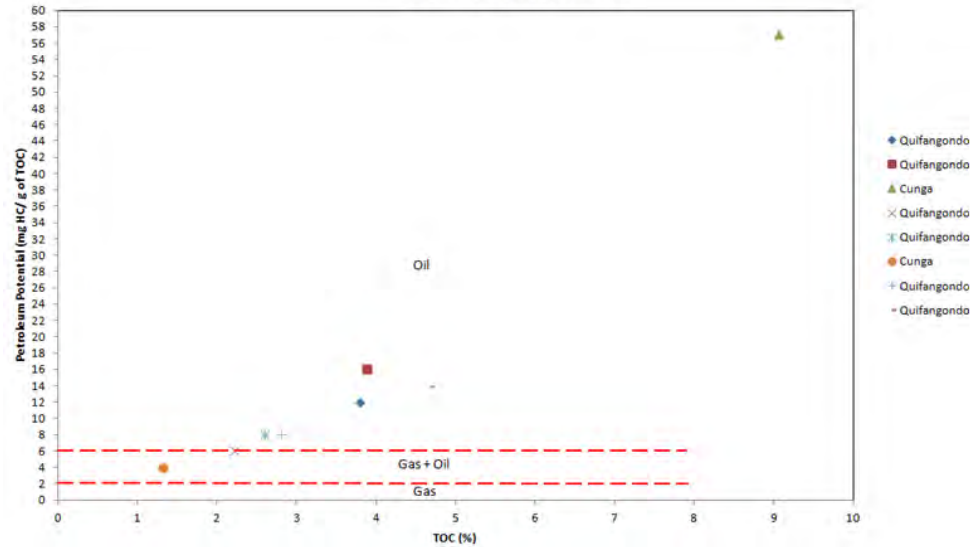


FIGURE 9: OCCURENCE OF THE QUIFANGONDO FORMATION

Source Rock Potential



BIOMARKER ANALYSES

Lithostratigraphic unit	KON	Well	Formation	Depth (m)	Type of Analysis	Sample	%API	%S	%Saturated	%Aromatics	%NSO	Pr/Ph	Pr/Ca17	Ph/Ca18	Ts/Ts+Tm	Gammacerane (ppm)	Depositional Environment
Tertiary	2	Luanda-8	Cunga		Chromatography	Oil	27.9	0.26	66.3	29.4	7.2	1.69	0.62	0.46			Mature and Transitional
	4	Quenguela Norte 38	Quifangondo				28.6	1.27	40.2	36.0	20.2	1.23	1.39	1.19			Marine
	6	Zango-1 Bis	Quifangondo	689-700						77				1.42	2.12	3.98	

(DATA FROM G & G WELL REPORTS , SONANGOL/ENI, NOPEC/ PETRANGOL/ LABOFINA)

☐ PRE – SALT UNIT:**CUVO FORMATION**

TOC – 0,5 TO 14,0% (EXCELLENT SOURCE ROCK)

HIDROCARBON – 50% SATURATES AND 34% AROMATICS (INDICATE MATURE SOURCE ROCK)

BIOMARKERS - FLUVIO – LACUSTRINE ENVIRONMENT

☐ EVAPO – CARBONATIC UNIT:**BINGA, CABO LEDO, N´GOLOME, ITOMBE E TEBA FORMATION**

TOC – 0,5 TO 7,0%

HIDROCARBON – 40 TO 59 % SATURATES AND BETWEEN 29 TO 46% AROMATICS (INDICATE MATURE SOURCE ROCK), °API BETWEEN 24 TO 31

BIOMARCADORES – TRANSICIONAL AND MARINE ENVIRONMENT

☐ TERTIARY UNIT:**CUNGA E QUIFANGONDO FORMATION**

TOC – 1,0 TO 9,0%

HIDROCARBON – BETWEEN 40 TO 77% SATURATES AND 29 TO 46 % AROMATICS, 28 °API
BIOMARKERS – MARINE ENVIRONMENT WITH CONTINENTAL CONTRIBUTION



KWANZA BASIN

**VALENTIM SILVA
&
LÚMEN SEBASTIÃO
DEX/DAR**

- THE KWANZA BASIN IS A PASSIVE MARGIN BASIN IN THE WEST AFRICA. IT IS LOCATED AT 8°00'E 11°30'S LATITUDE, LIMITED TO THE NORTH BY AMBRIZ HIGH AND TO THE SOUTH BY THE BENGUELA BASIN.

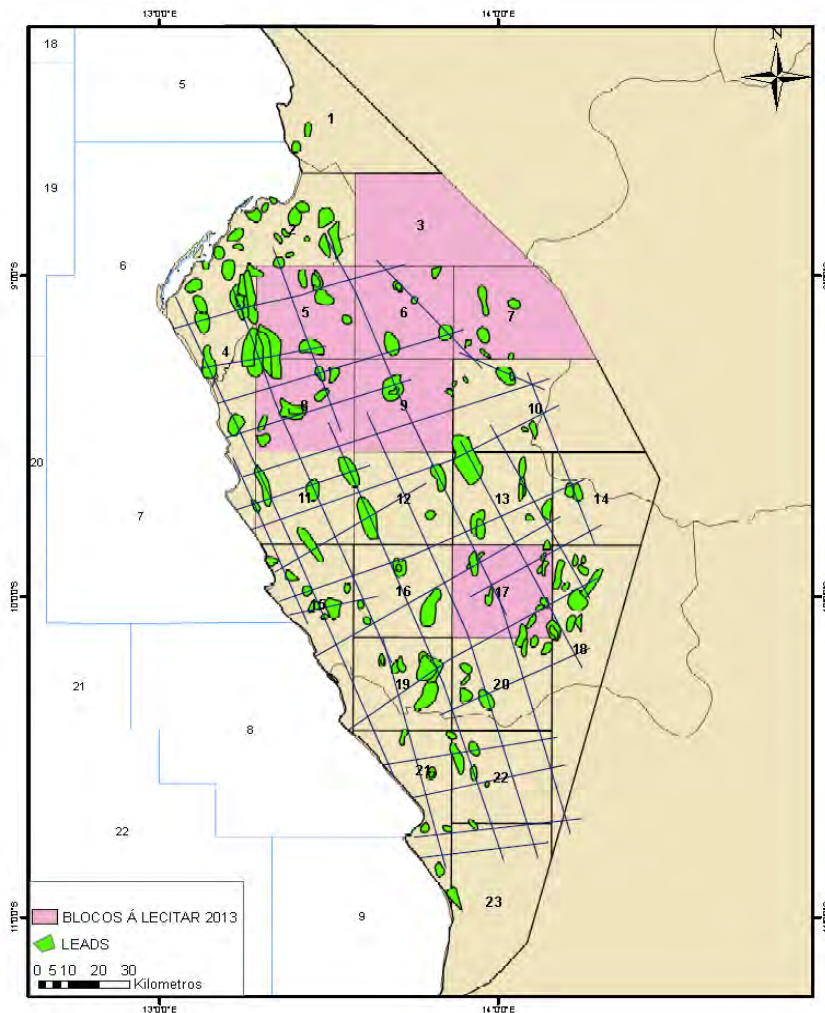
THE ONSHORE PORTION COVERS AN AREA OF AROUND 25.000 KM², WITH AROUND 250 EXPLORATION WELLS DRILLED SINCE THE BEGINNING OF 1950.

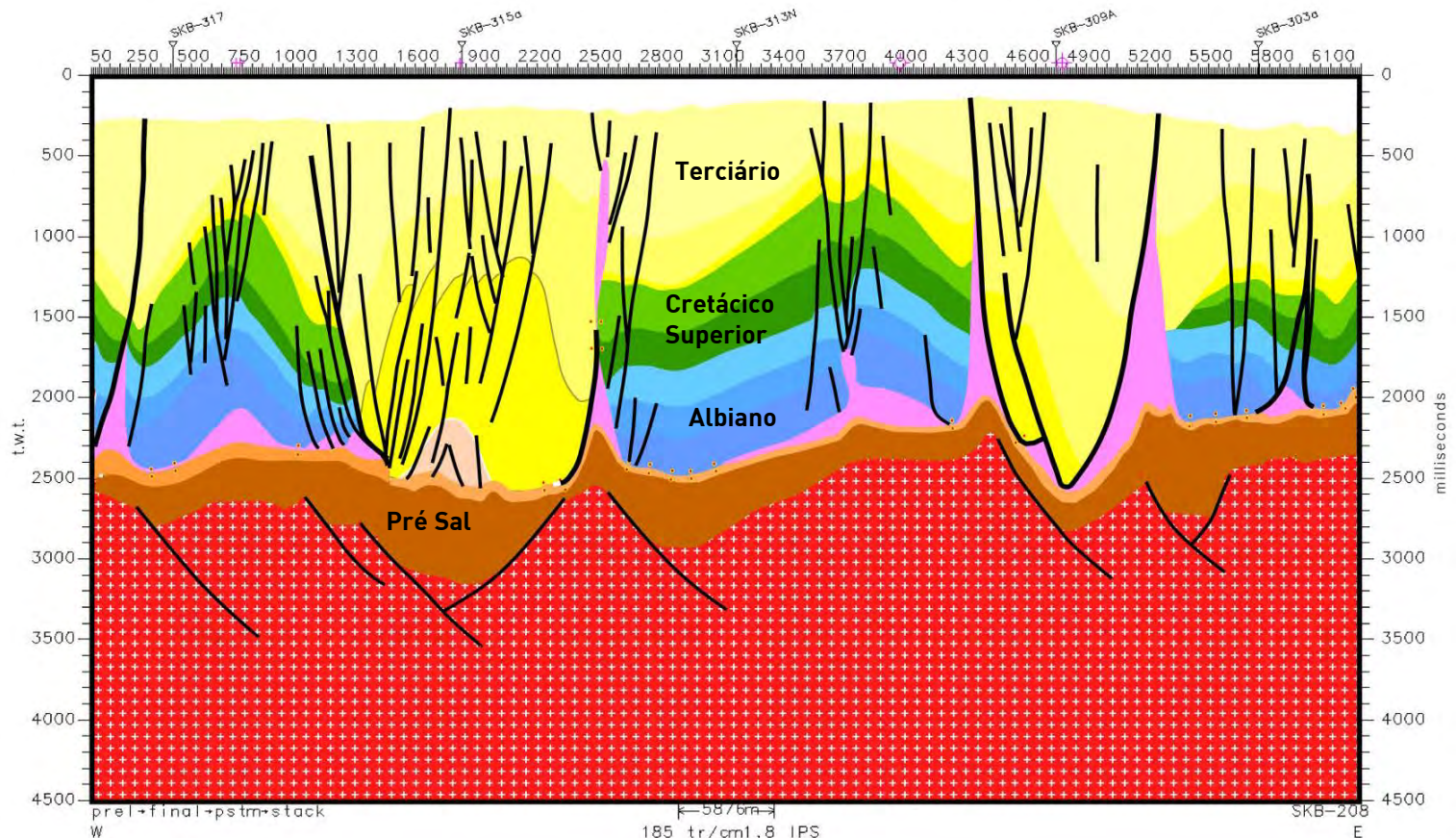
BLOCKS TO BID

KON3, KON5, KON6, KON7, KON8, KON9, KON17

MAIN DISCOVERIES:

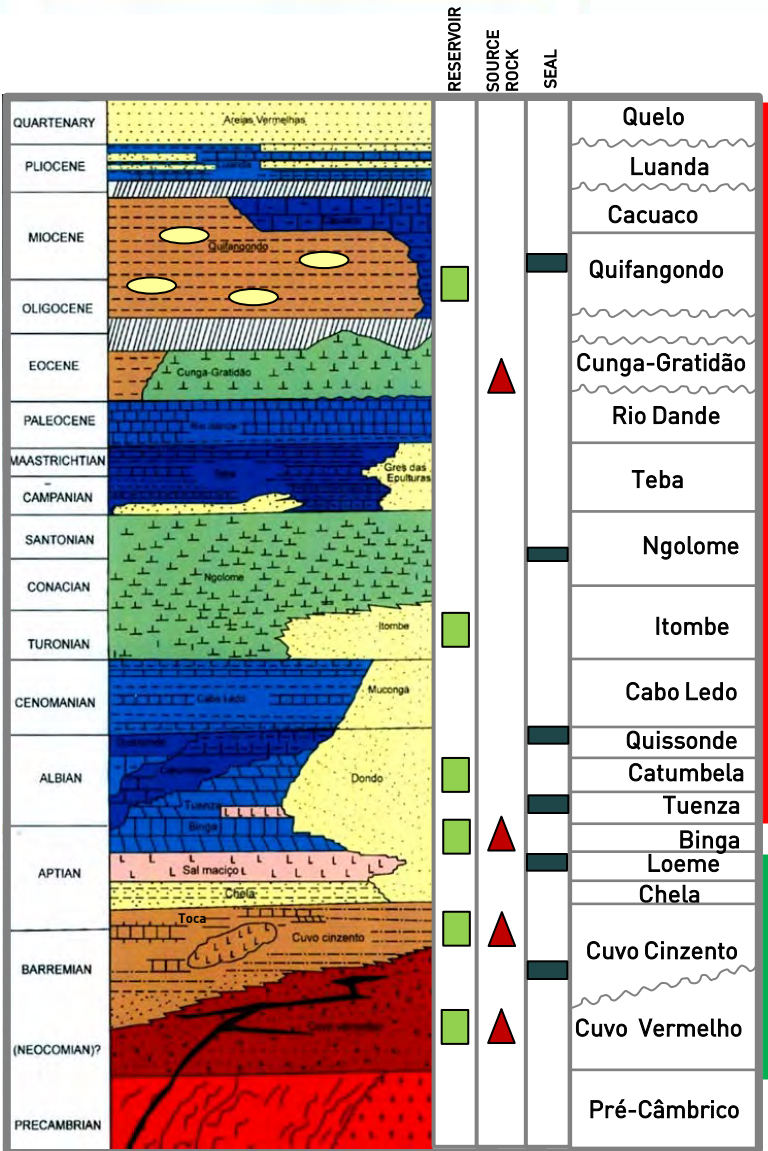
BENFICA
 LUANDA
 CACUACO
 TOBIAS
 GALINDA
 PUAÇA
 MULENVOS
 LÉGUA
 QUENGUELA NORTH
 QUENGUELA SOUTH
 BENTO





■ THE GEOLOGICAL PROFILE SHOWS A RIFT-TO-DRIFT PASSIVE MARGIN, WITH THE PRESENCE OF HORSTS AND GRABENS IN THE PRE-SALT, AND RAFTS AND TERTIARY TROUGH CAN BE FOUND IN POST-SALT.

■ THE EXPLORATION OBJECTIVES CAN BE FOUND IN THE CHELA SANDS AND TOCA CARBONATES EQUIVALENT, WHICH ARE MAINLY PRE-SALT RESERVOIRS. THE ALBIAN CARBONATES, UPPER CRETACEOUS, AND THE TERTIARY SANDSTONE CHANNELS ARE THE MAIN POST-SALT RESERVOIRS.

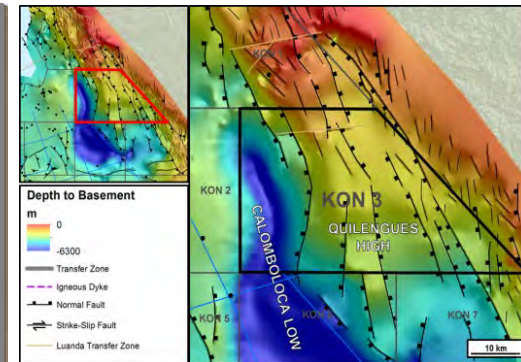
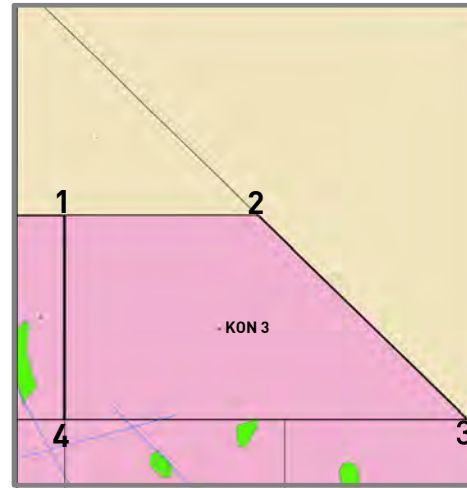
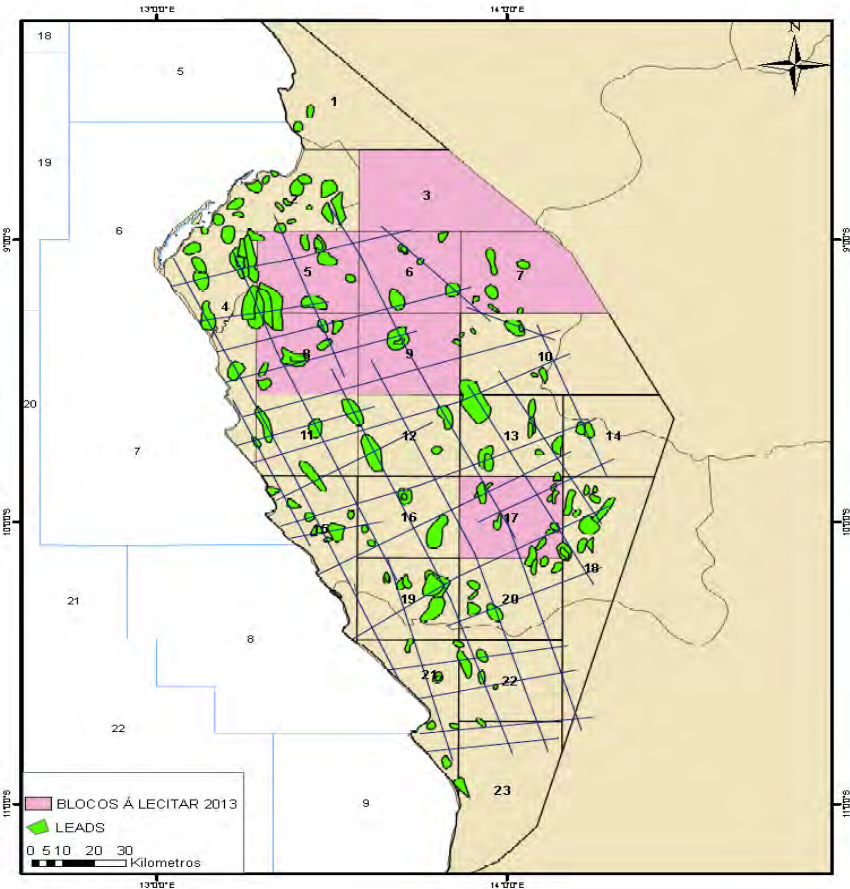


POST-SALT

QUIFANGONDO (Sandstones)	■
CUNGA (Clay/Marl)	▲
ITOMBE (Sandstones)	■
CATUMBELA (Limestone)	■
BINGA (Oolitic Limestone)	▲ ■

PRE-SALT

CHELA (Sandstones)	■
GRAY CUVO (Sandstones, Limestone, and Clay)	▲ ■
TOCA EQUIVALENTE (Limestone)	■
RED CUVO (Sandstones, Carbonates and Clay)	▲ ■

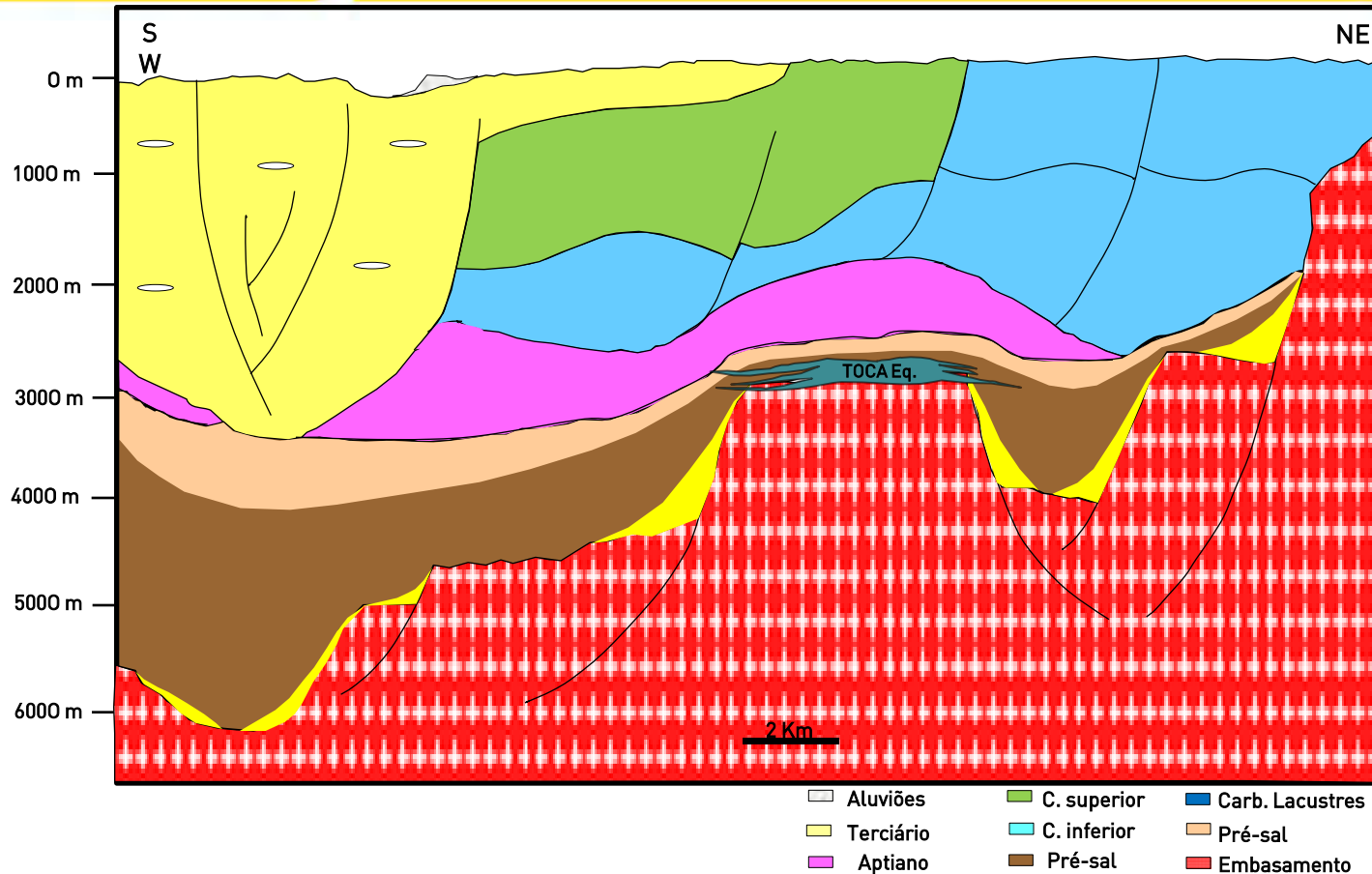


Points	Latitude S	Longitude E
1	8°40'53"	13°34'47"
2	8°40'53"	13°50'05"
3	8°58'14"	14°06'39"
4	8°58'14"	13°34'47"

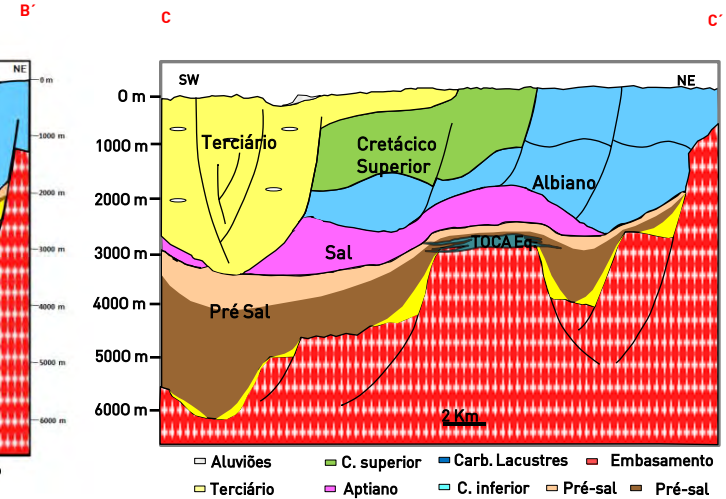
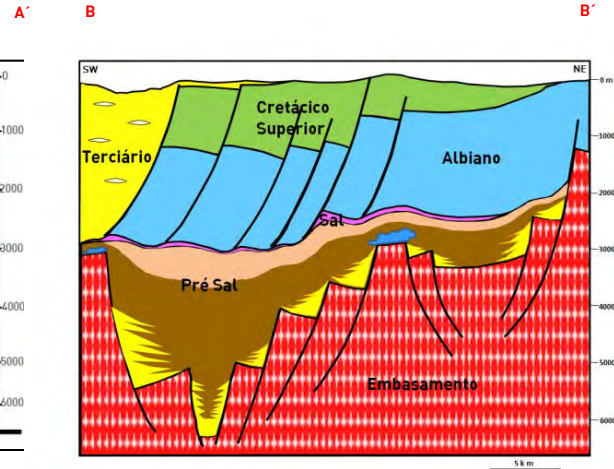
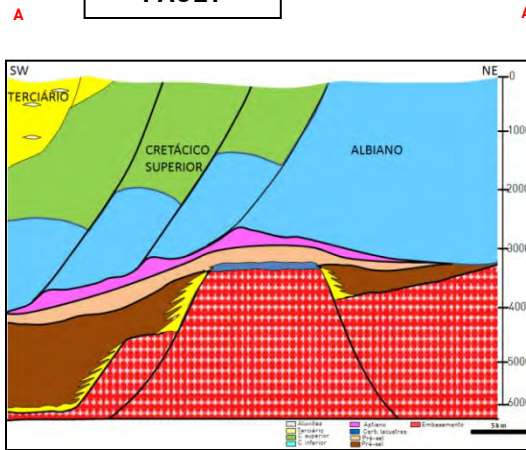
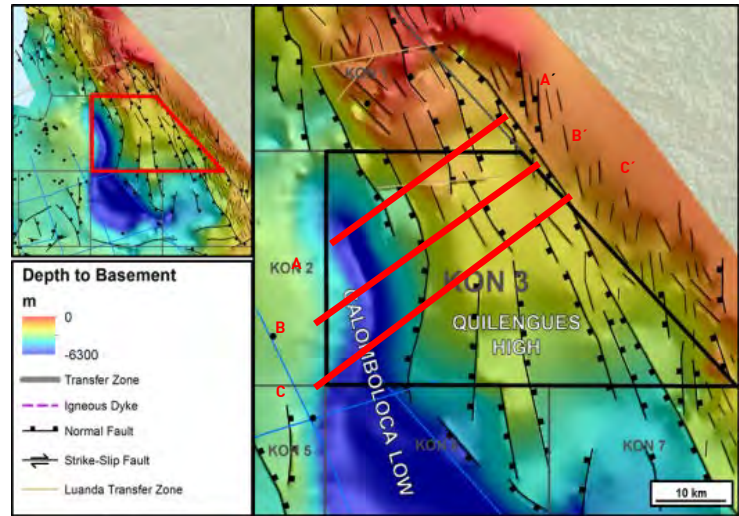
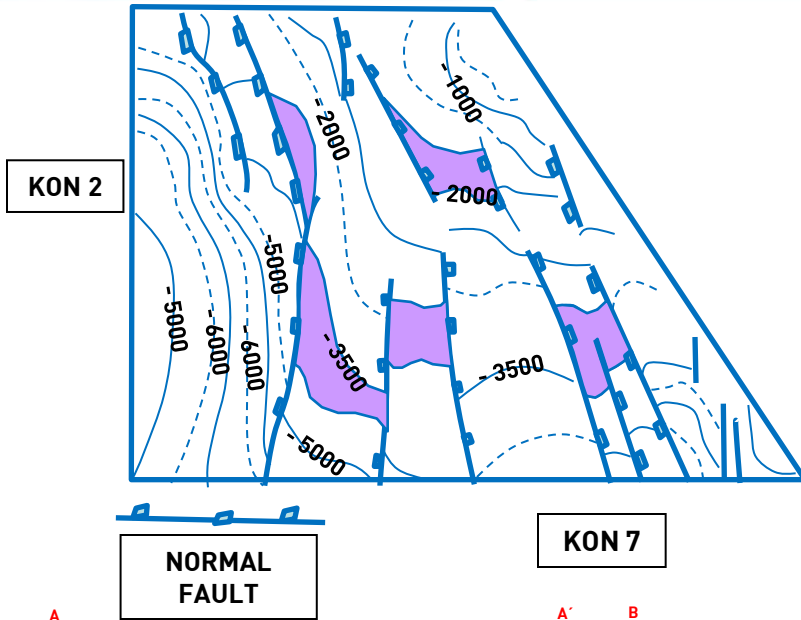
AREA: 1385.06 Km²

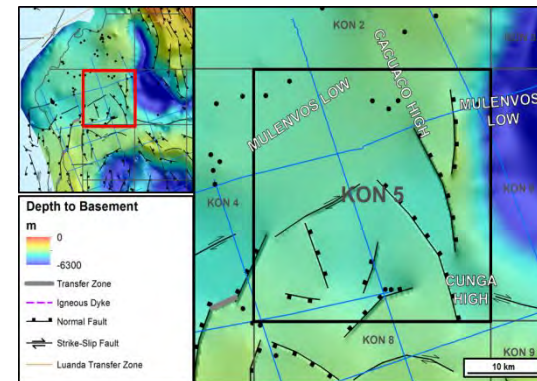
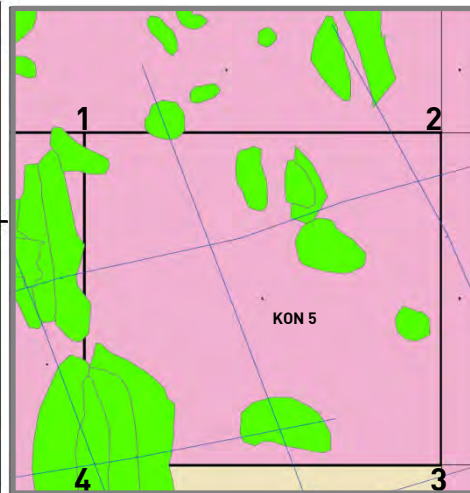
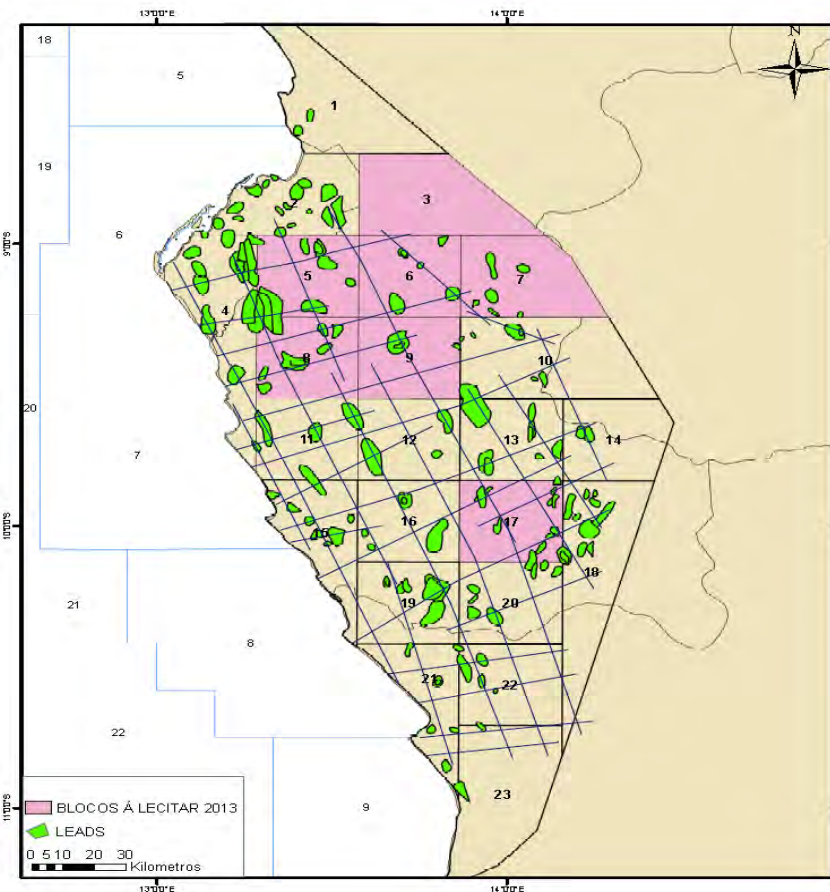
TOTAL SEISMIC ACQUIRED: 549.17 Km 2D

TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



- GEOLOGICAL PROFILE OF KON 3, SHOWS HORSTS AND GRABENS DEVELOPED IN THE DIRECTION OF THE BASIN'S BORDER AT THE PRE-SALT LEVEL.
- POST-SALT SHOWS STRUCTURES IN THE SHAPE OF A TURTLE SHELL IN ALBIAN AND CRETACEOUS.





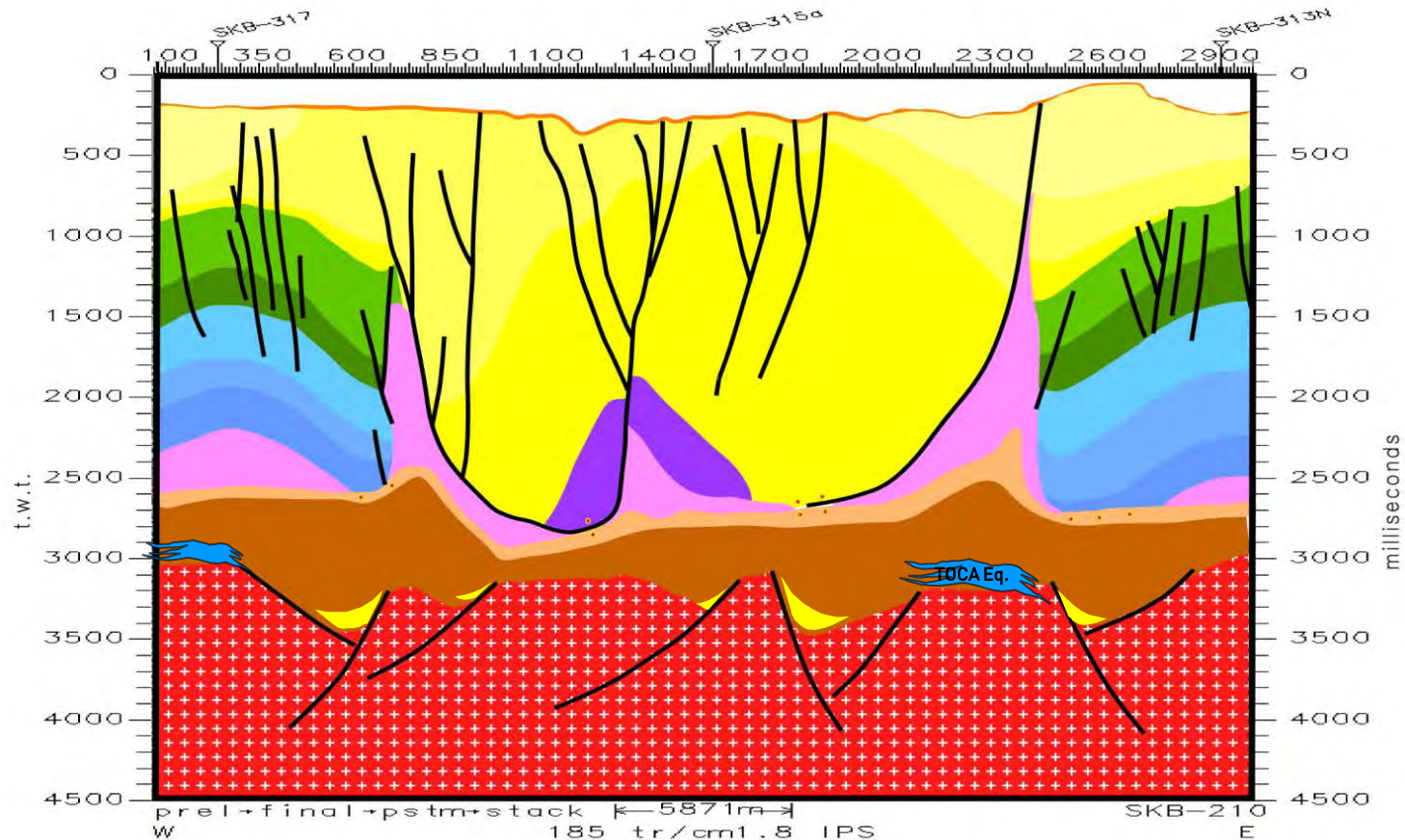
Points	Latitude S	Longitude E
1	8°58'14"	13°17'15"
2	8°58'14"	13°34'47"
3	9°15'36"	13°34'47"
4	9°15'36"	13°17'15"

AREA: 1024,00 Km²

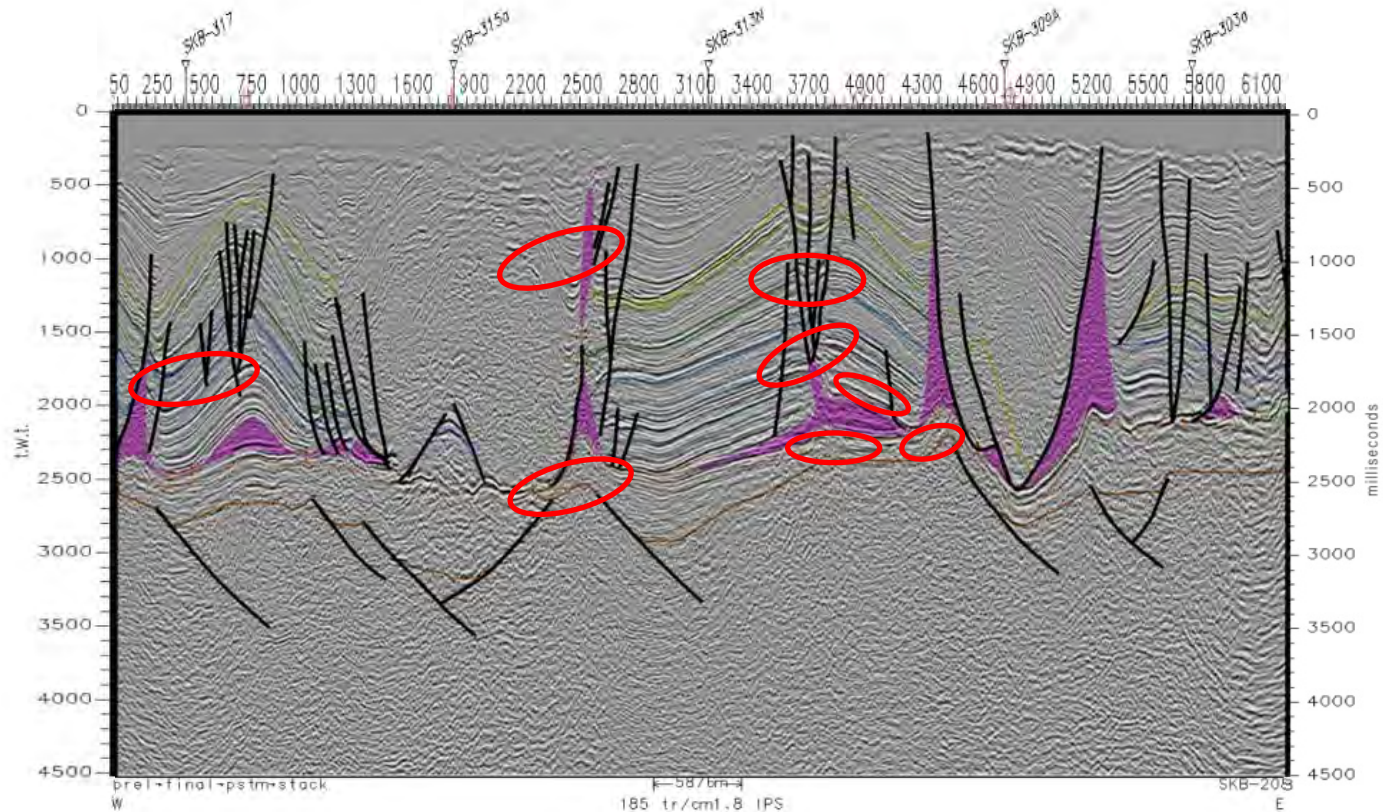
NEW SEISMIC TOTAL: 95,3 Km 2D

OLD SEISMIC TOTAL: 1000,74 Km 2D

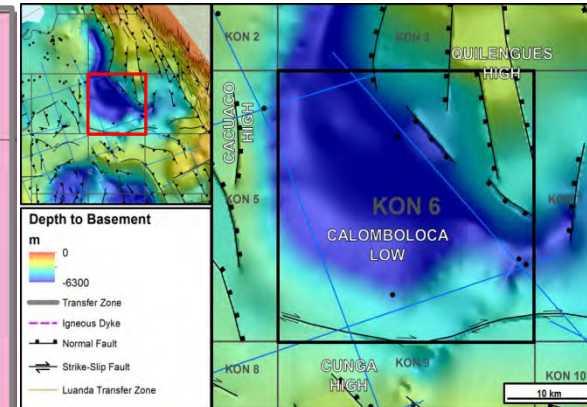
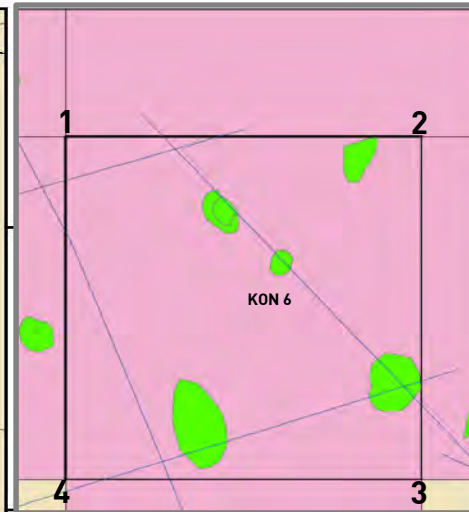
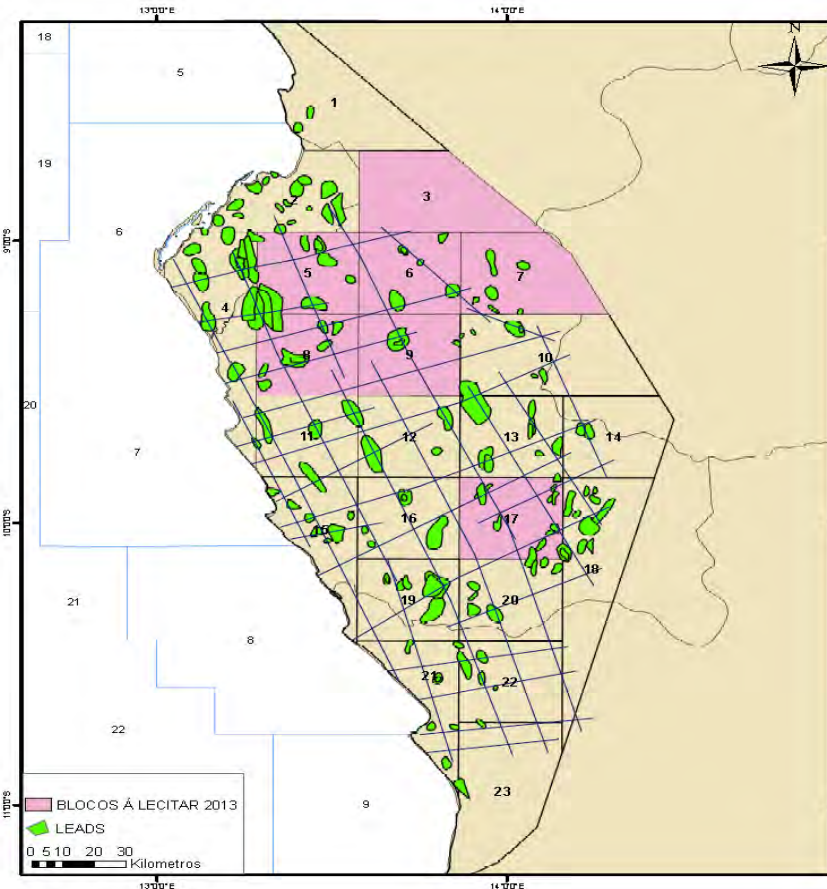
TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



- THE GEOLOGICAL PROFILE SHOWS HORTS AND GRABENS IN THE PRE-SALT
- IN THE POST-SALT, THE BINGA CARBONATES IN THE ALBIAN AGE FORMS THE TRAP,, WITH NORMAL FAULTS ASSOCIATED WITH HALOCINESE AND TURBIDITES IN THE TERTIARY TROUGH.



- LEADS IDENTIFIED IN THE SAG PHASE AND THE BASEMENT HIGHS OF THE PRE-SALT, THE ALBIAN (BINGA FORMATION) CARBONATES IN THE UPPER (ITOMBE FORMATION) CRETACEOUS AND IN THE TERTIARY TURBIDITES CHANNELS



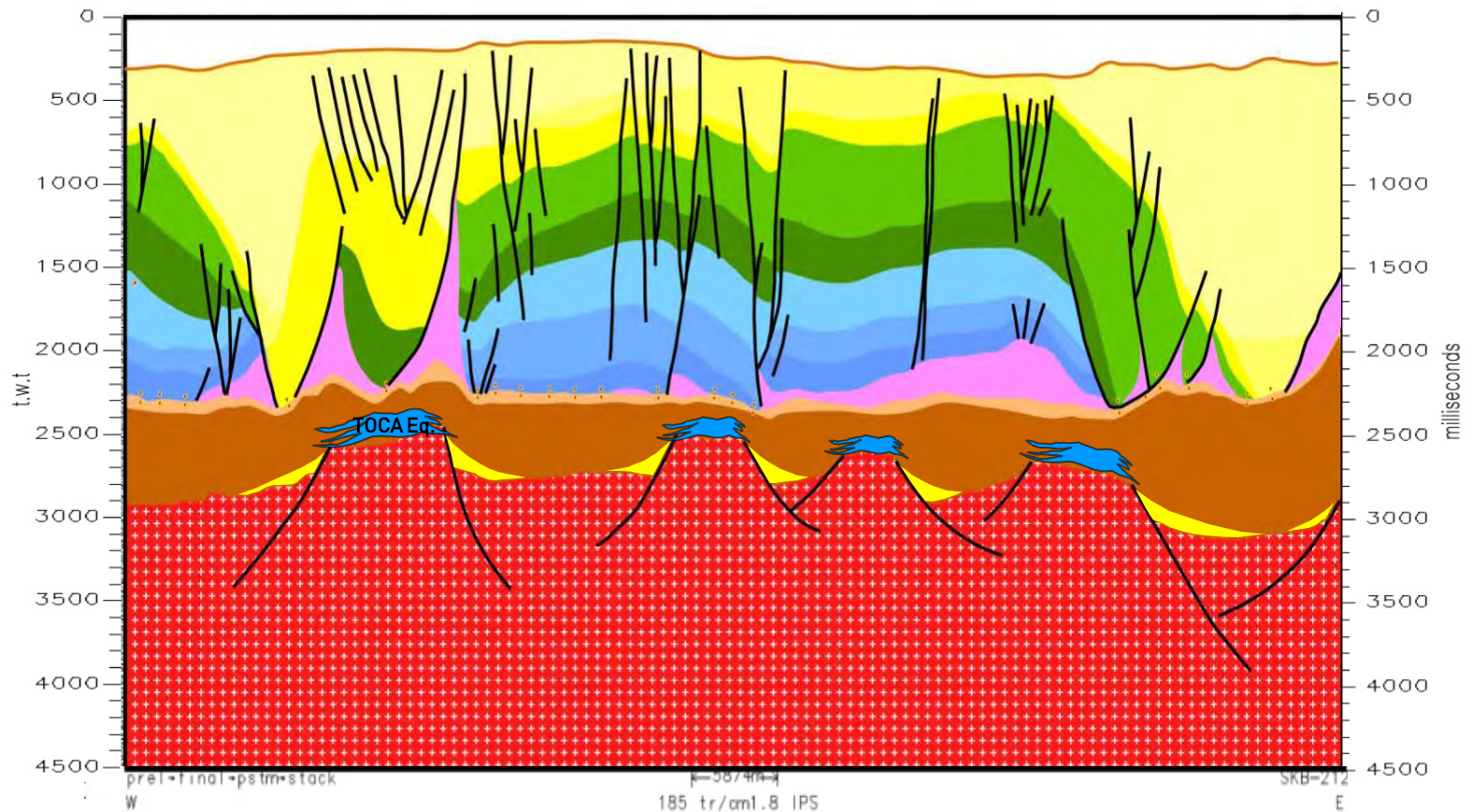
Points	Latitude S	Longitude E
1	8°58'14"	13°34'47"
2	8°58'14"	13°52'11"
3	9°15'36"	13°52'11"
4	9°15'36"	13°34'47"

AREA: 1024,00 KM²

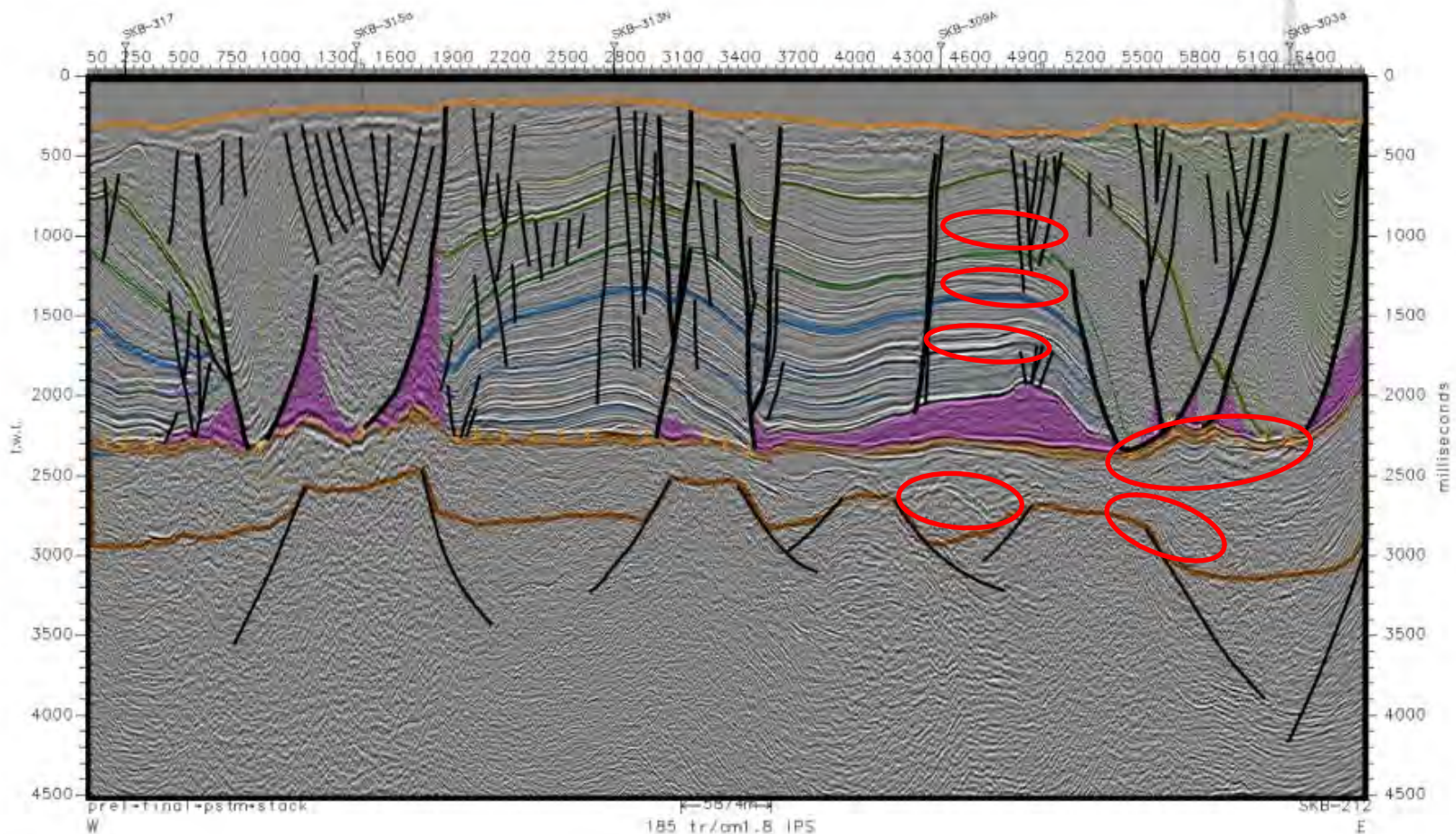
NEW SEISMIC TOTAL: 103 KM 2D

OLD SEISMIC TOTAL: 731,317 KM 2D

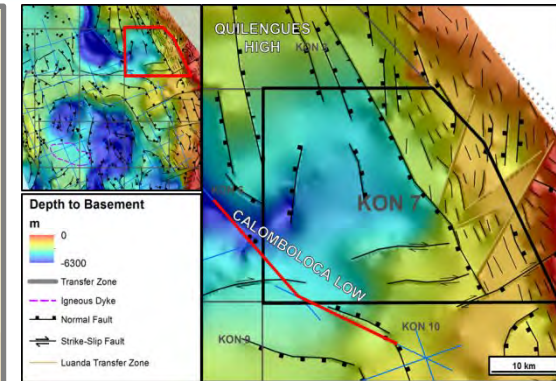
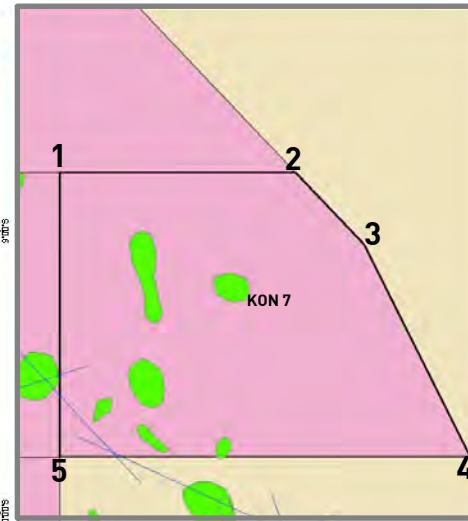
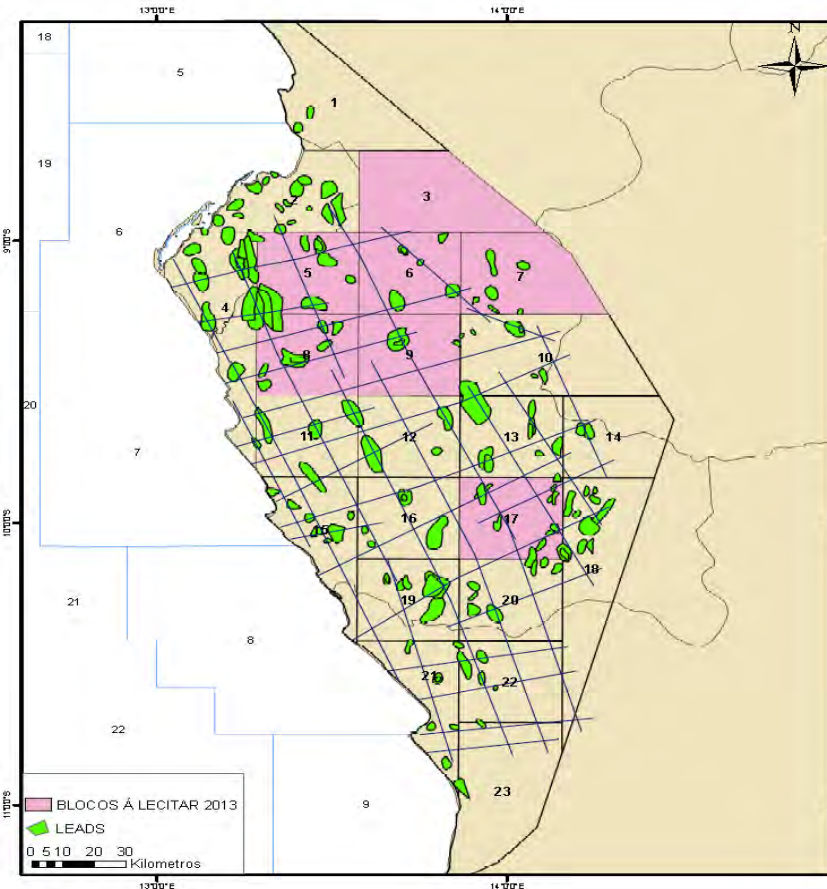
TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



- THE EXPLORATION POTENTIAL IS EVIDENT IN THE THREE PLAYS IDENTIFIED IN THE BASIN.



- SEVERAL LEADS WERE IDENTIFIED IN THE CHELA FM IN THE PRE-SALT. POTENTIAL CARBONATES RESERVOIRS IN THE ALBIAN AND UPPER CRETACEOUS IN THE POST-SALT.

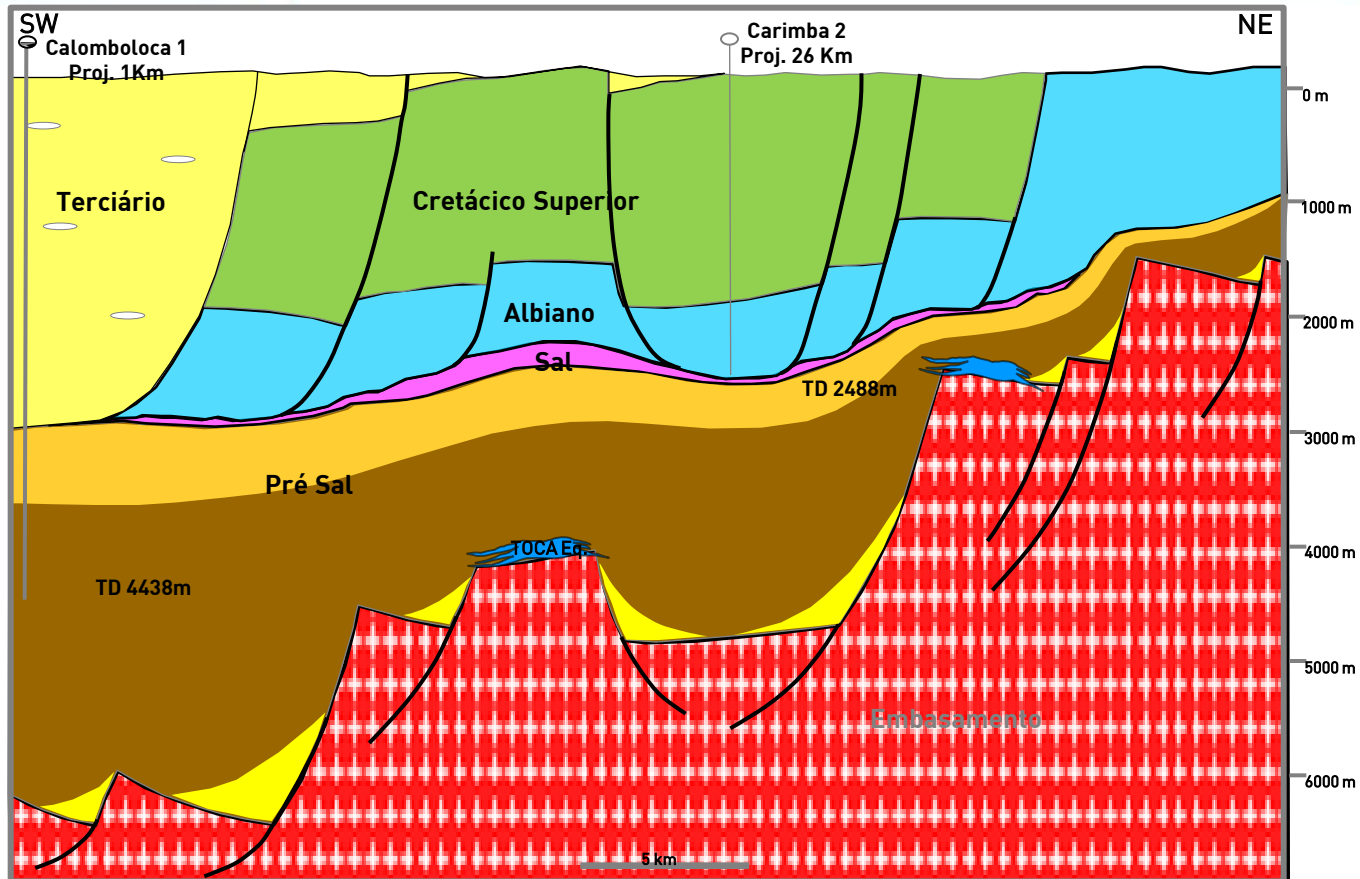


Points	Latitude S	Longitude E
1	8°58'14"	13°52'11"
2	8°58'14"	14°06'39"
3	9°02'40"	14°34'47"
4	9°15'36"	14°17'13"
5	9°15'36"	13°52'11"

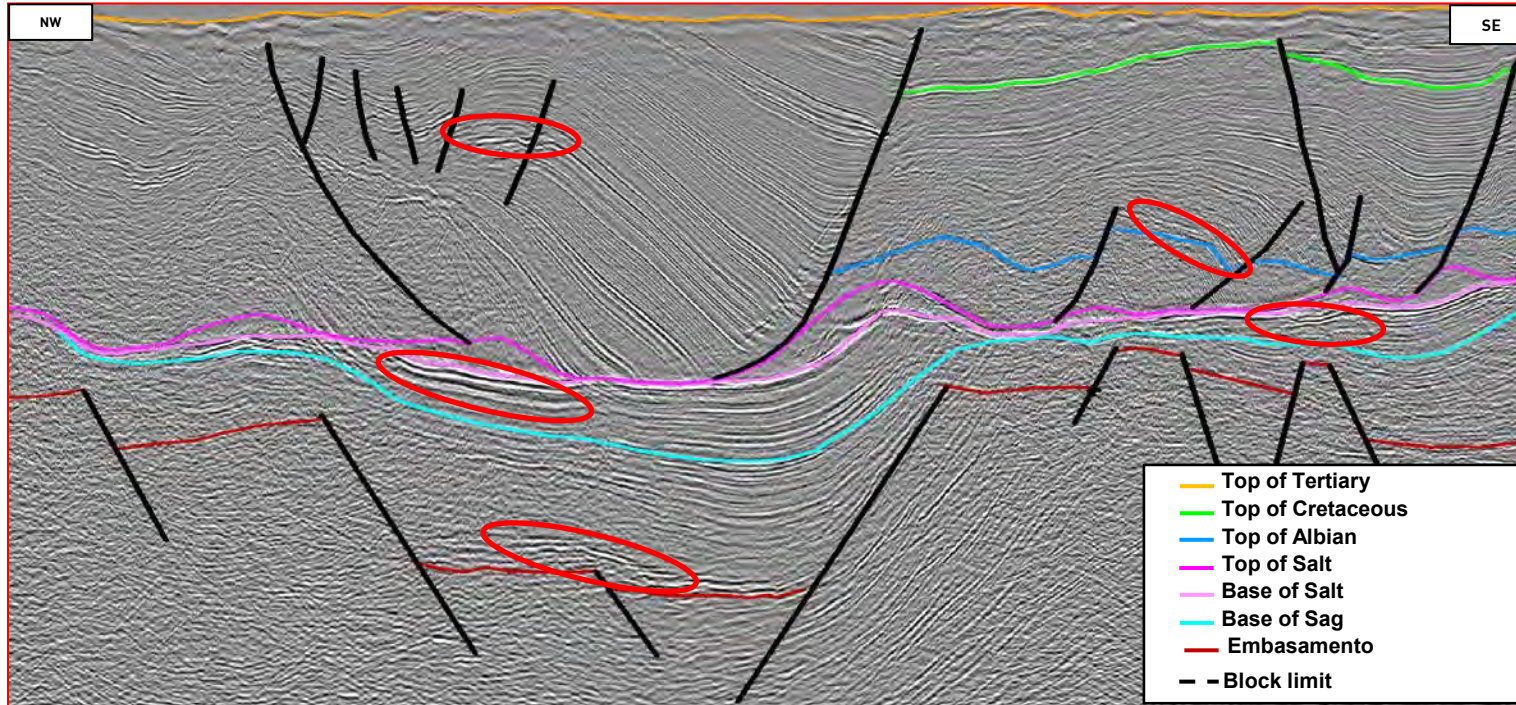
AREA: 1027,86 Km²

TOTAL SEISMIC ACQUIRED: 749,817 Km 2D

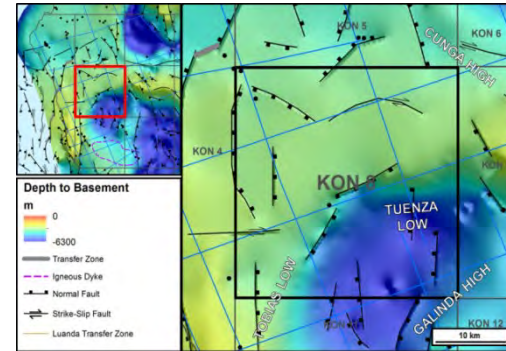
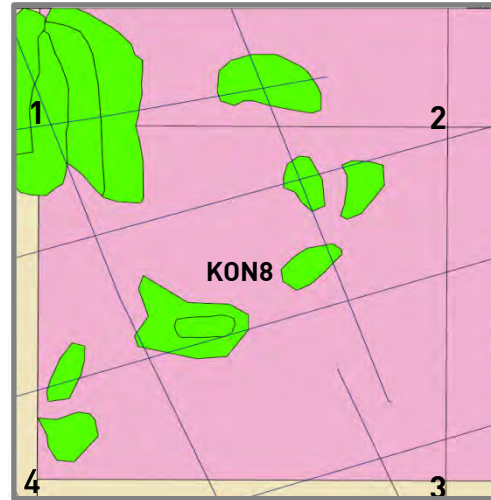
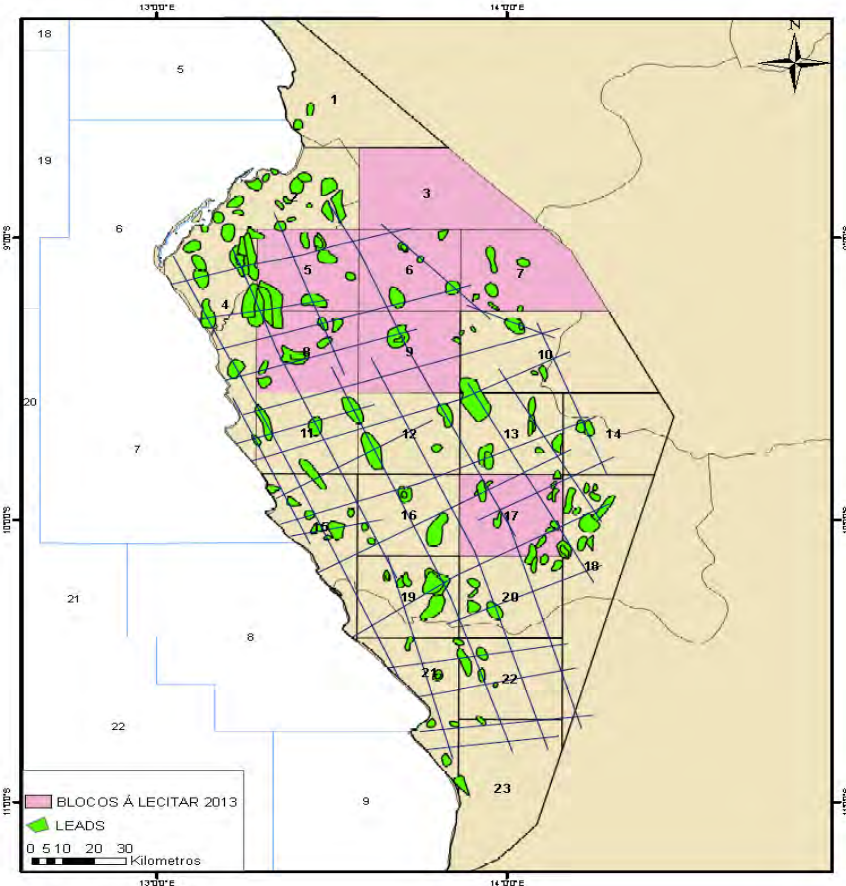
TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



- PRE-SALT HIGH STRUCTURES
- POST-SALT NORMAL FAULTS ASSOCIATED WITH SALT MOVEMENT



- REPRESENTATIVE SEISMIC LINE OF KON7 WITH SEVERAL LEADS IDENTIFIED IN THE PRE AND POST SALT.



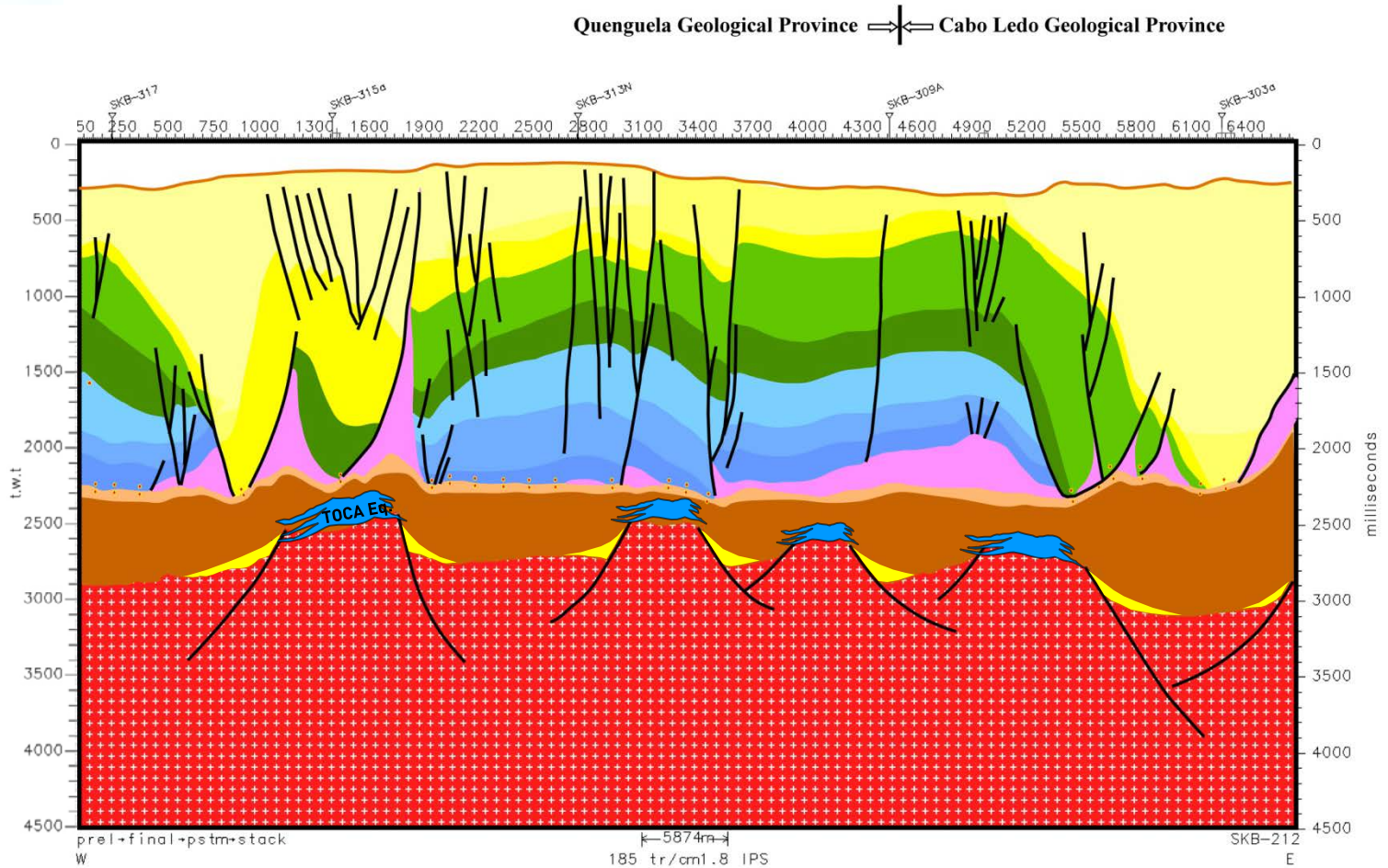
Points	Latitude S	Longitude E
1	9°15'36"	13°17'159"
2	9°15'36"	14°34'47"
3	9°32'48"	14°34'47"
4	9°32'48"	14°17'15"

AREA: 1024,00 Km²

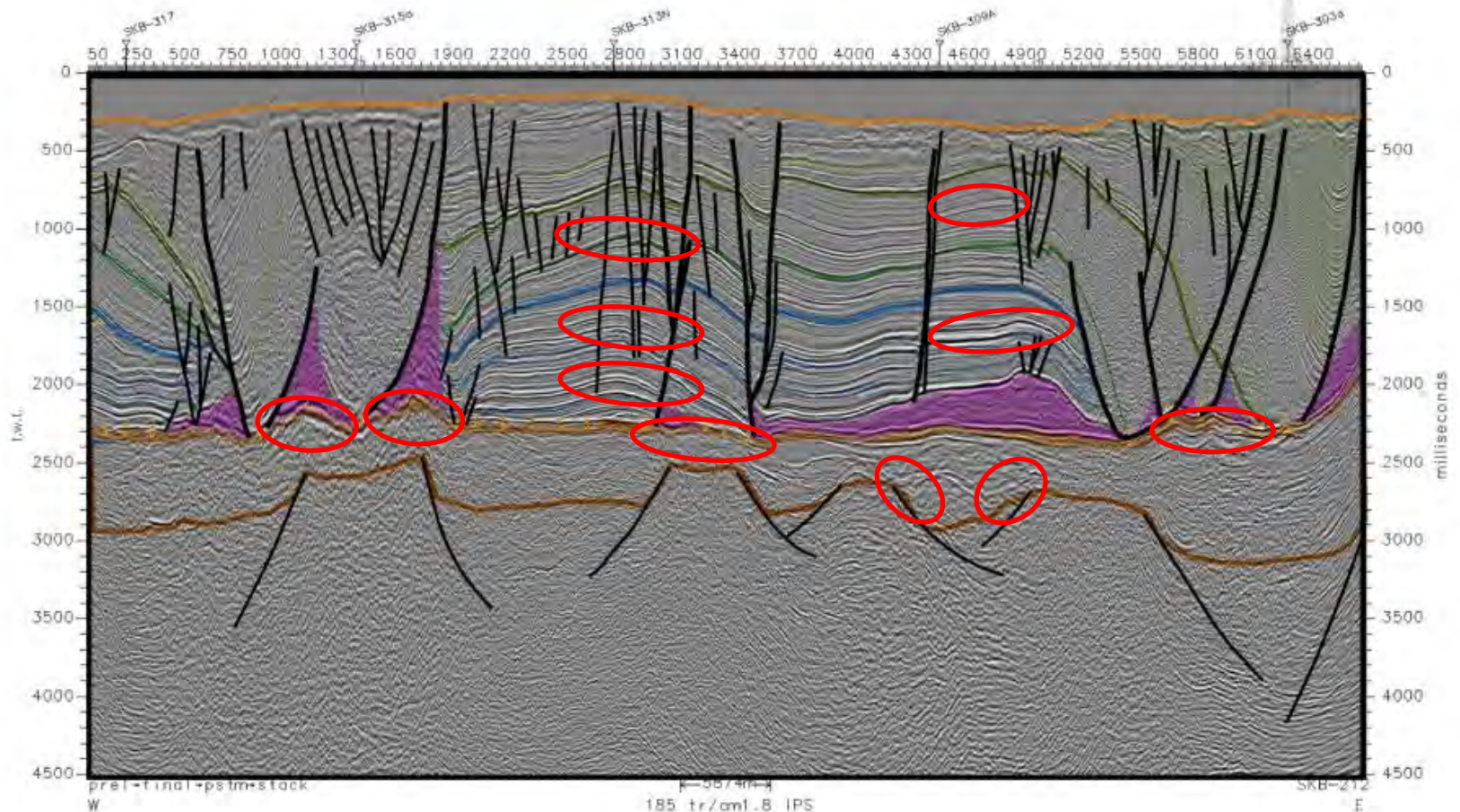
NEW SEISMIC ACQUIRED : 149,8 Km 2D

OLD SEISMIC ACQUIRED: 1039,11 Km 2D

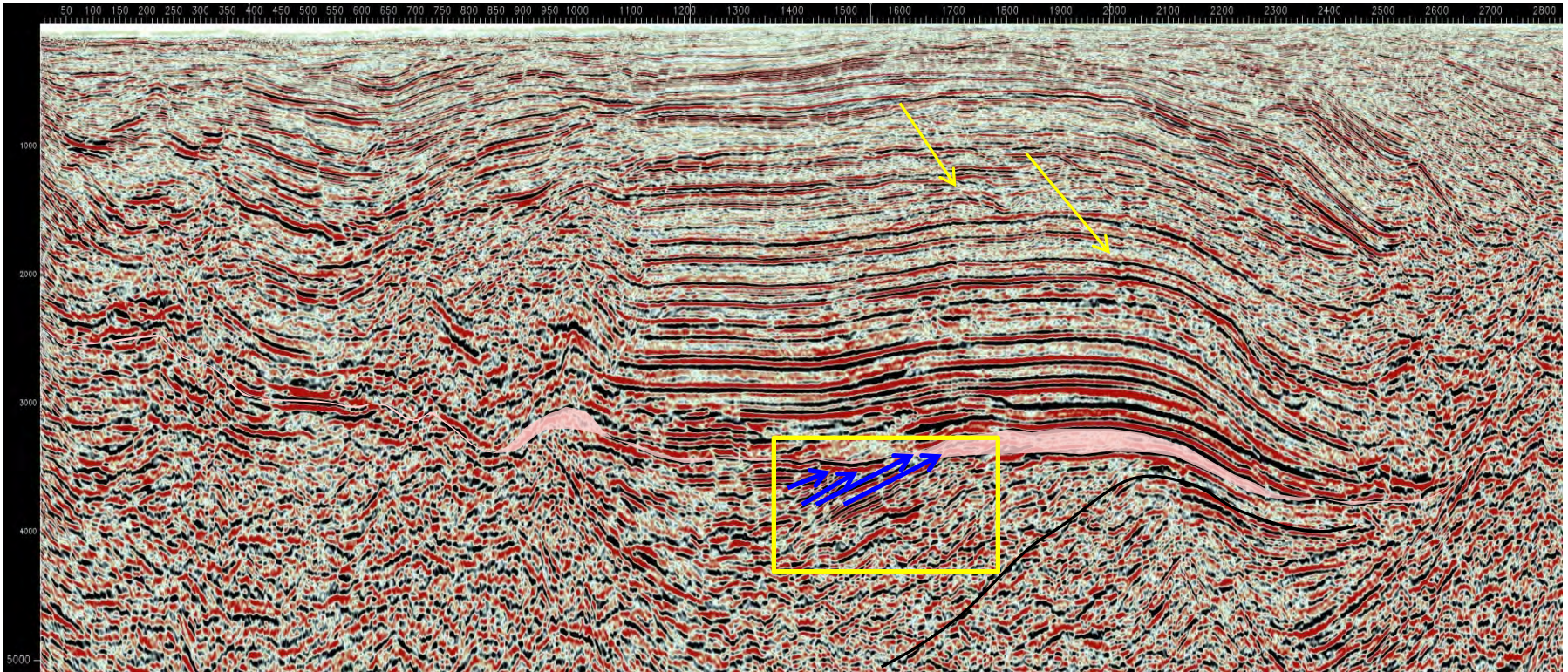
TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



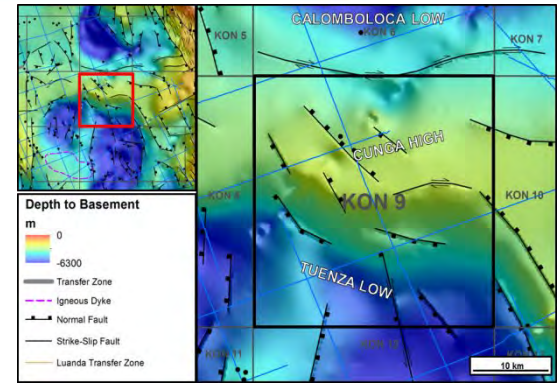
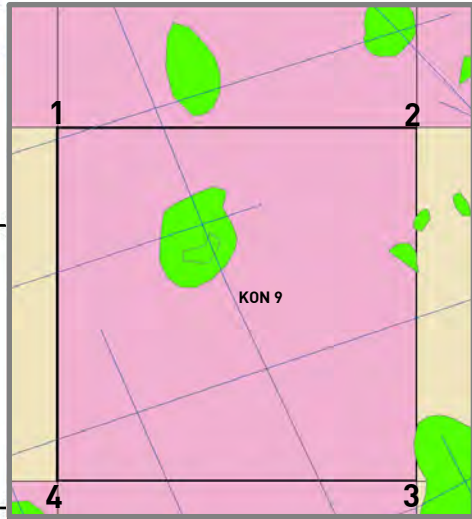
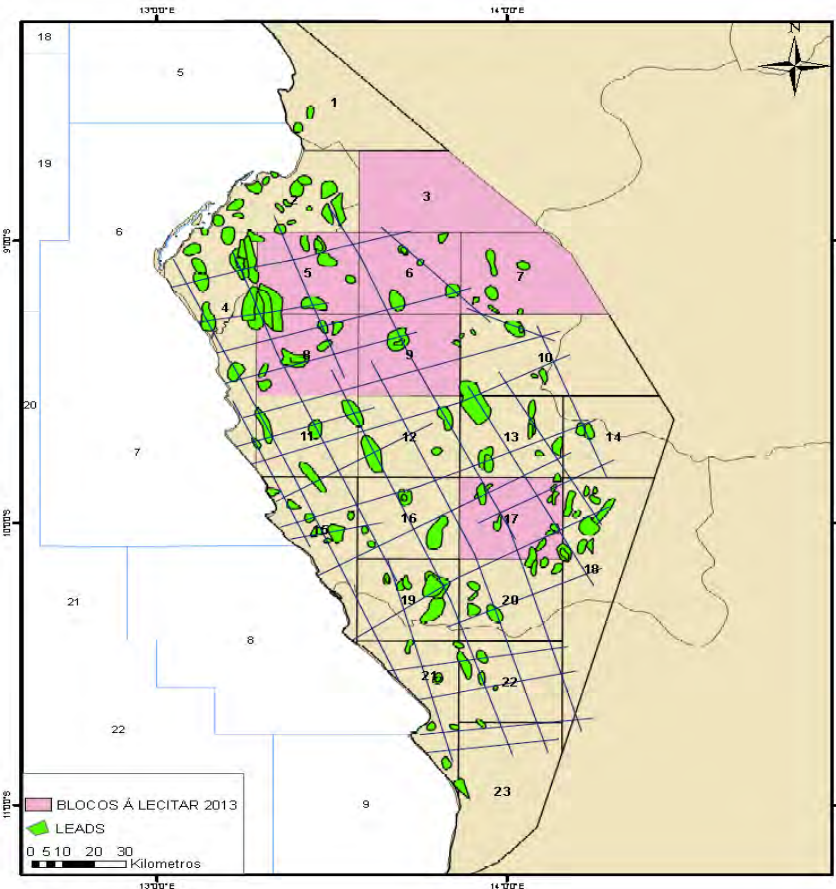
▪ **GEOLOGICAL PROFILE SHOWN IN ITS REGIONAL CONTEXT WITH SYN-RIFT AND SAG WELL DEVELOPED AND PRESENCE OF TERTIARY TROUGHS FUNDA AND QUENGUELA.**



- POTENTIAL RESERVOIRS WERE IDENTIFIED IN THE CHELA (SANDS) FORMATION AND TOÇA (CARBONATES) AT THE PRE-SALT LEVEL
- IN THE POST-SALT THE MAIN RESERVOIRS ARE FOUND IN THE RAFTED BLOCKS OF THE BINGA AND CATUMBELA FORMATIONS IN THE ALBIAN AGE, ITOMBE IN THE UPPER CRETACEOUS AND TERTIARY (QUENGUELA) TROUGH.



- LEAD IN PINCH-OUT AGAINST THE BASE SALT IN THE SAG PHASE, DEPOSITED IN THE HORSTS FLANKS.



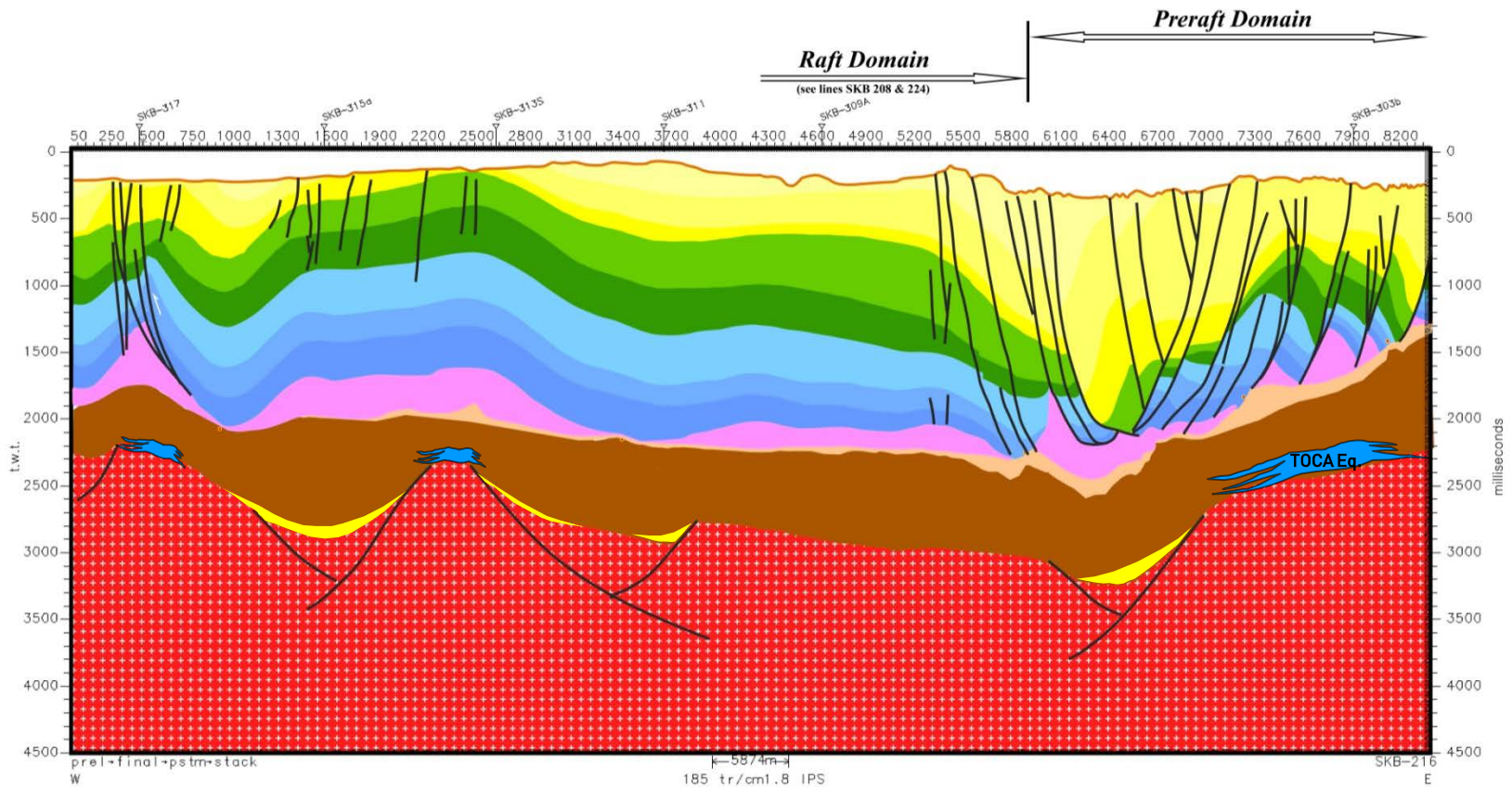
Points	Latitude S	Longitude E
1	9°15'36"	13°34'47"
2	9°15'36"	13°52'11"
3	9°32'58"	13°52'11"
4	9°32'58"	13°34'47"

AREA: 1024,00 Km²

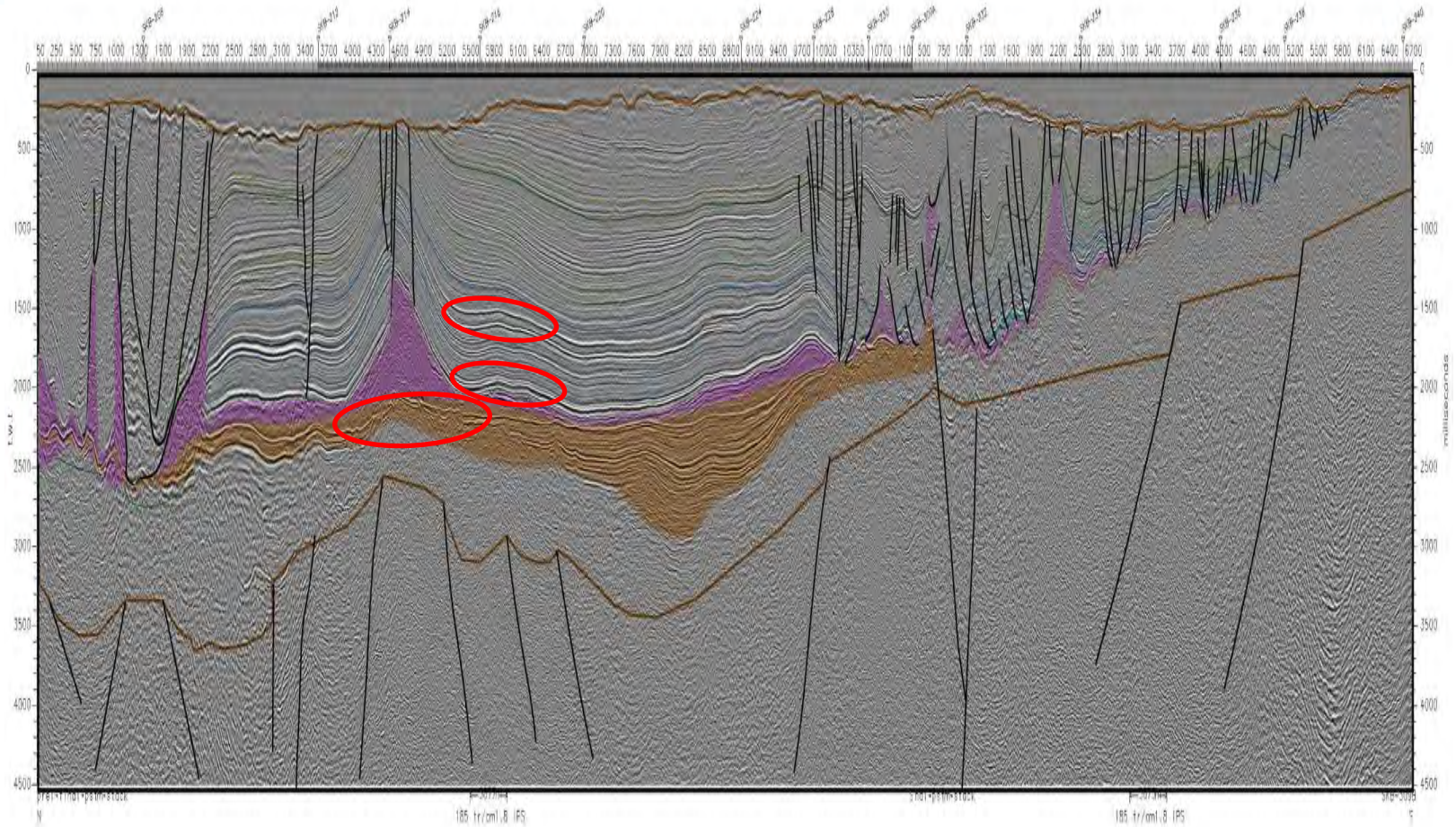
NEW SEISMIC ACQUIRED: 87,8 Km 2D

OLD SEISMIC ACQUIRED: 731,317 Km 2D

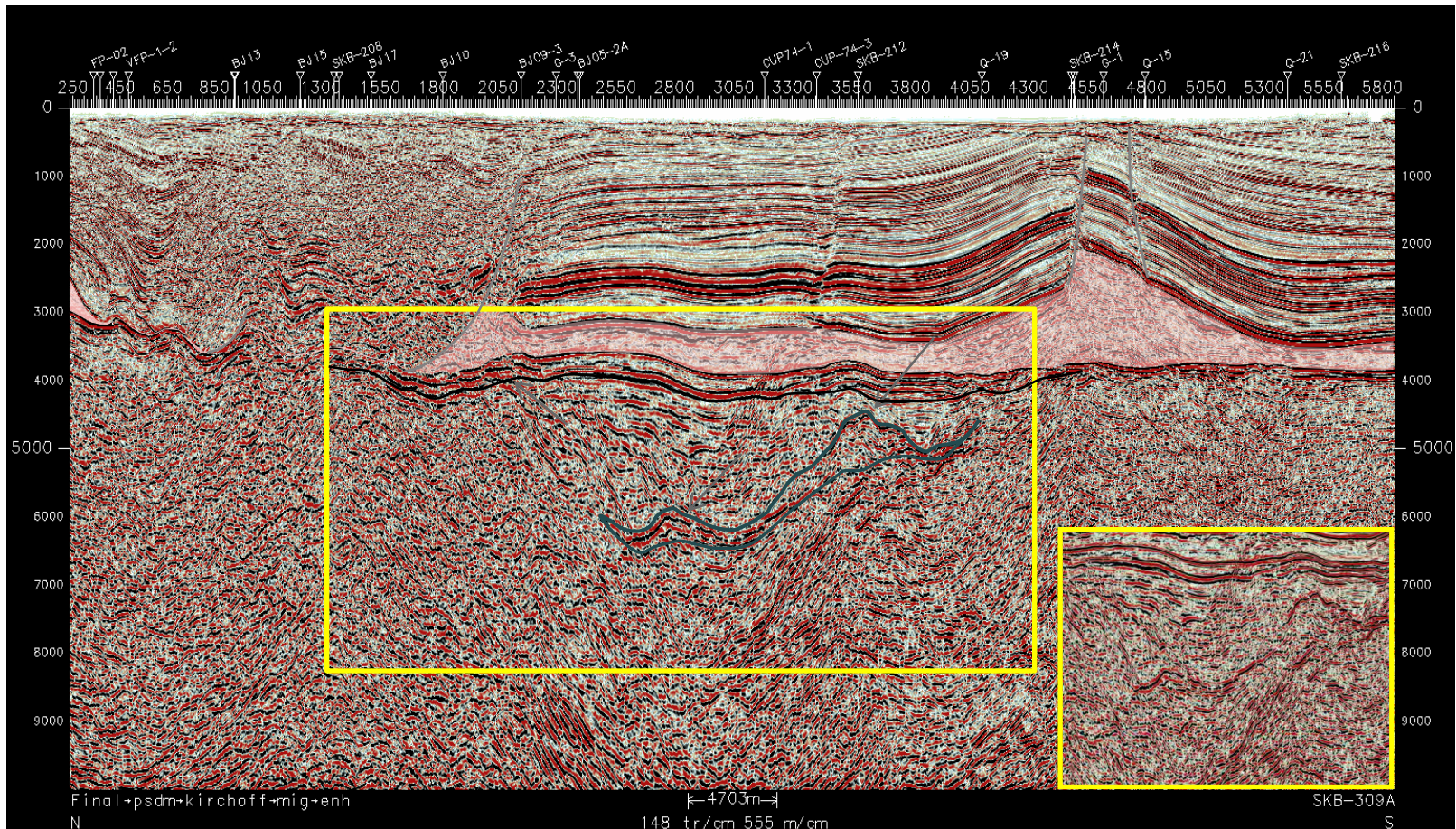
TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



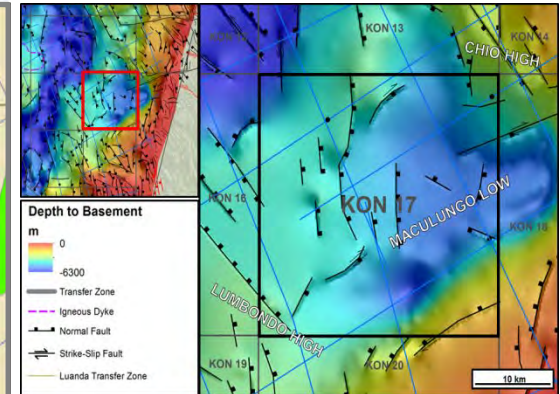
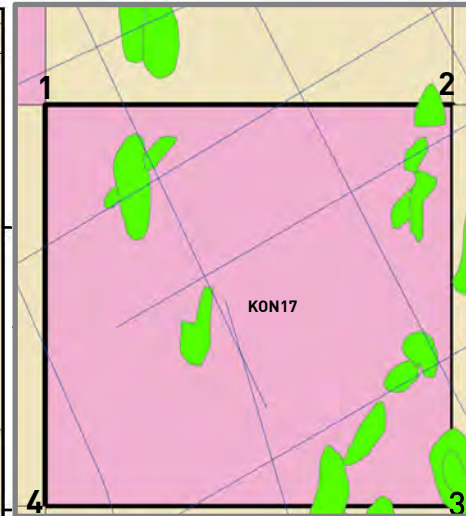
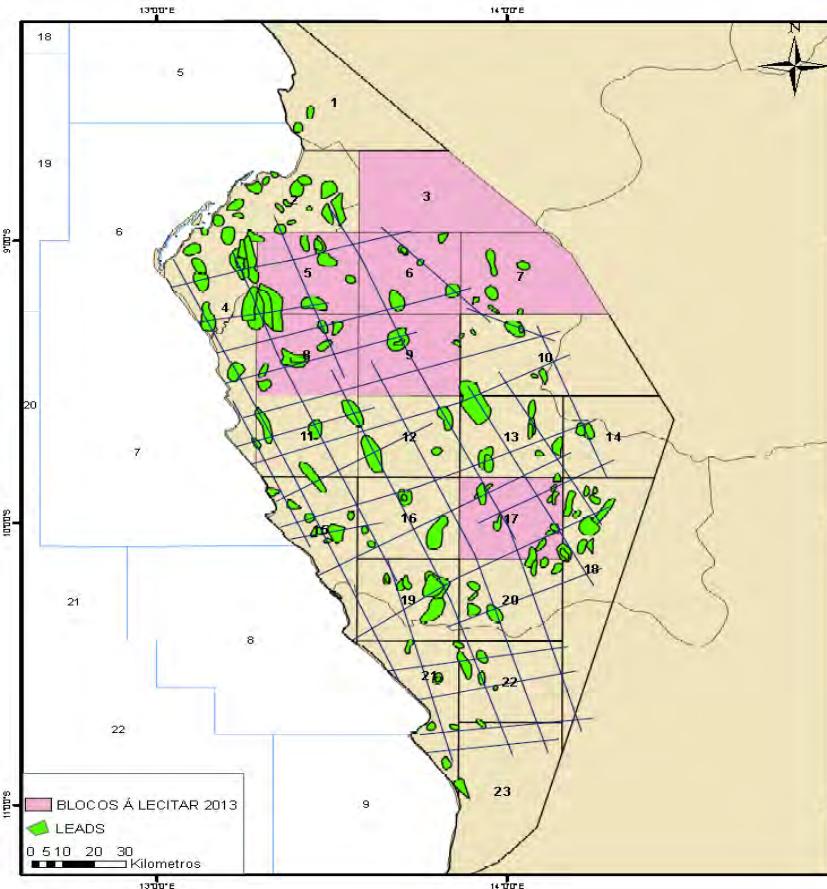
- PRE-SALT SHOWS A FORMATION OF HORSTS AND GRABENS WITH MORE THAN 3,000 MTS OF SEDIMENTS
- POS-SALT SHOWS A PRESENCE OF NORMAL FAULTS WITH RAFTS, AND TERTIARY THROUGH WITH EXTENSIONAL FAULTS AND SALT DOMES TO THE WEST



- LEAD IDENTIFIED IN THE PRE-SALT, CHELA FORMATION WITH 4 WAY CLOSURE AND SEALED BY LOEME FORMATION WITH MORE THAN 500 METERS OF THICKNESS
- IN THE POS SALT WERE IDENTIFIED LEADS IN THE BINGA AND CATUMBELA CARBONATES OF THE ALBIAN AGE.



- **COMBINED TRAP WITH REFLECTORS INDICATING POSSIBLE HC ACCUMULATION IN THE SAG PHASE**



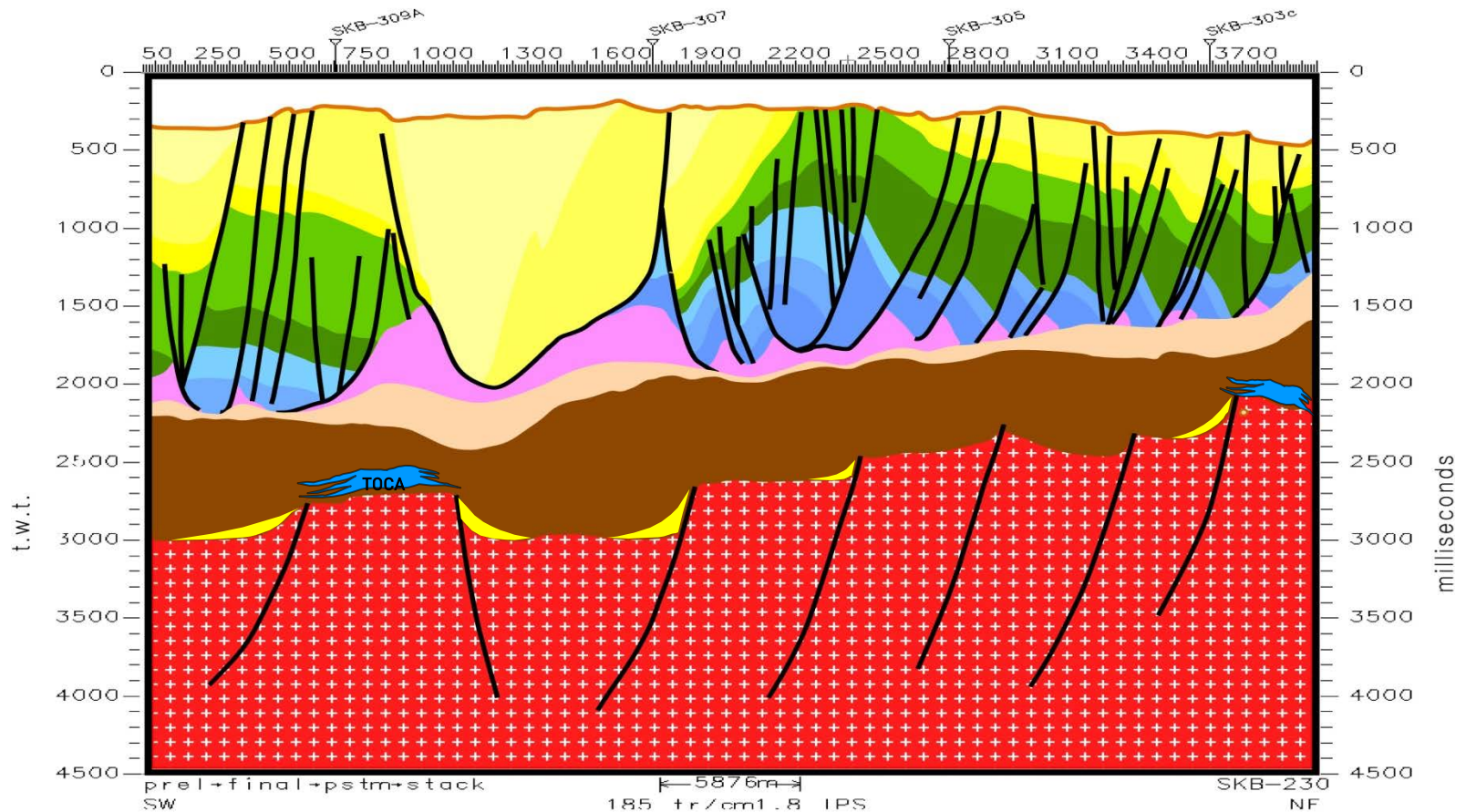
Points	Latitude S	Longitude E
1	9°50'19"	13°52'11"
2	9°50'19"	14°09'28"
3	10°07'45"	14°09'28"
4	10°07'45"	13°52'11"

AREA: 1014,75 Km²

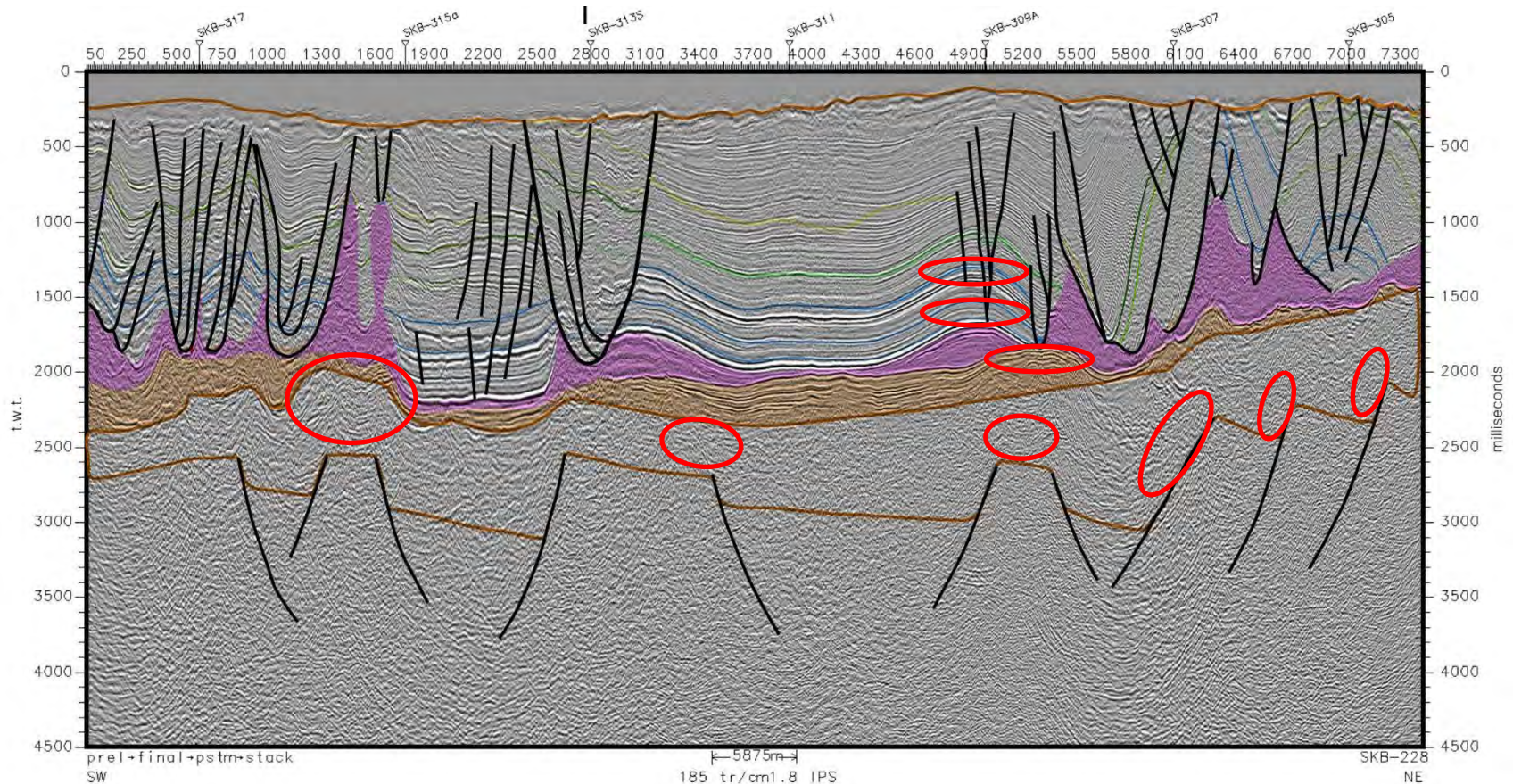
NEW SEISMIC TOTAL: 156 Km 2D

OLD SEISMIC TOTAL: 980,10 Km 2D

TOTAL COVERAGE OF AEROMAGNETIC/GRAVIMETRIC DATA (AVAILABLE)



- PRESENCE OF HORSTS AND GRABENS IN THE PRE-SALT.
- RAFTS AND TERTIARY TROUGH CHARACTERIZE THE STRUCTURE OF THE BLOCK IN POS-SALT.



• POSSIBLE TO IDENTIFY LEADS IN THE SAG PHASE AT THE PRE-SALT LEVEL AND ALBIAN CARBONATES FROM THE BINGA FORMATION

BLOCKS	EXPLORATION OBJECTIVES	PROVISIONAL RESOURCES (MMBO)
KON3	TERTIARY	350
	CARBONATE	
	PRE-SALT	
KON5	TERTIARY	472
	CARBONATE	
	PRE-SALT	
KON6	TERTIARY	679
	CARBONATE	
	PRE-SALT	
KON7	TERTIARY	108
	CARBONATE	
	PRE-SALT	
KON8	TERTIARY	470
	CARBONATE	
	PRE-SALT	
KON9	TERTIARY	259
	-CARBONATE	
	PRE-SALT	
KON17	TERTIARY	206
	CARBONATE	
	PRE-SALT	
TOTAL		2.544

- PRESENCE OF THREE OIL SYSTEMS PROVED AND TESTED IN THE BASIN
- PRESENCE OF STRUCTURES ASSOCIATED WITH THE RIFT AND SAG PHASES, AS WELL AS RAFTS AND TURBIDITE CHANNELS AT THE ALBIAN LEVEL AND THE TERTIARY TROUGH
- PRESENCE OF MULTIPLE PLAYS AT PRE-SALT AND POS SALT

**SONANGOL E.P.
ROADSHOW 2013-2014**

THANK YOU FOR YOUR ATTENTION



Data Packages for Bidding 2013/14

21/02/14

Isabel Policarpo da Silva

Ercílio Almeida

Sonangol/GAD – Gabinete de Gestão e Arquivo de Dados

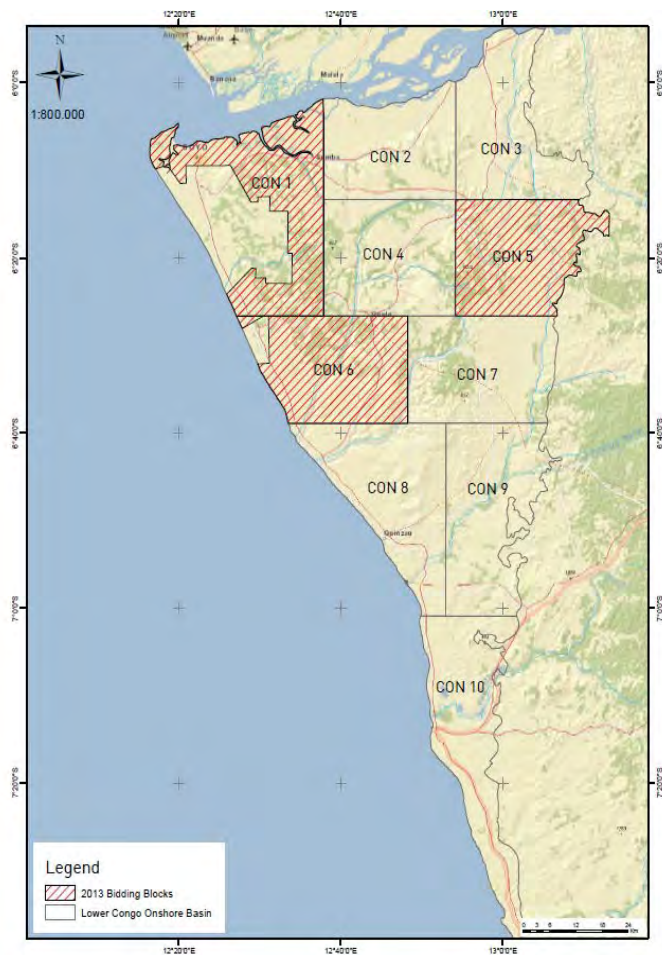


1. Introduction
2. Blocks for Bidding
3. Data Packages Structure
4. Information Available
5. Data Package Application Requirements
6. Data Package
7. Contacts



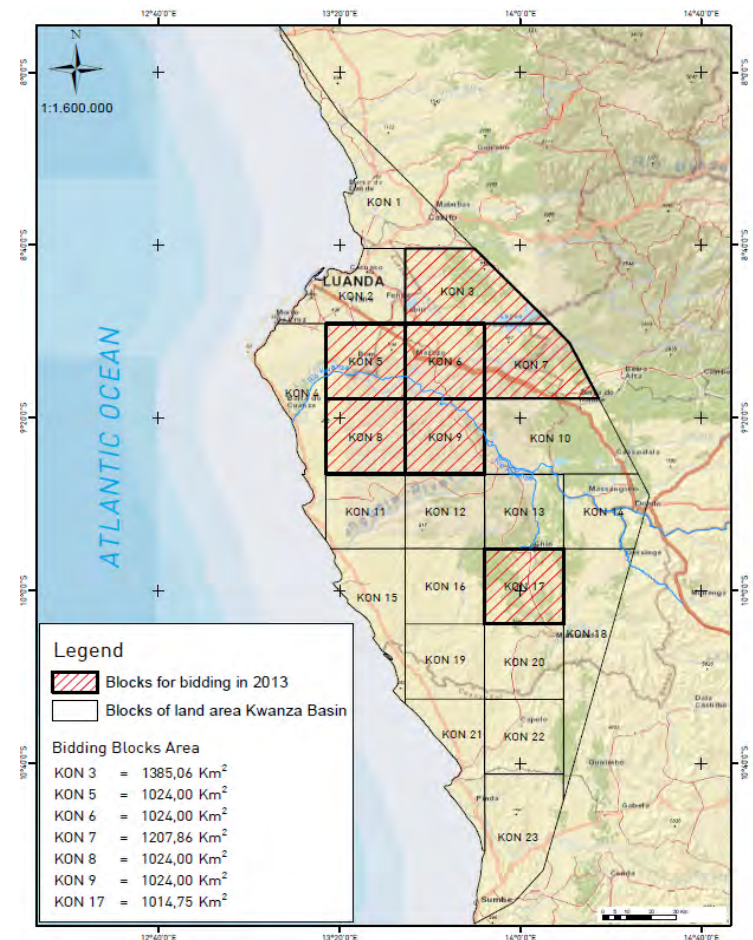
10 Blocks will be available for Bidding

Lower Congo Onshore Basin

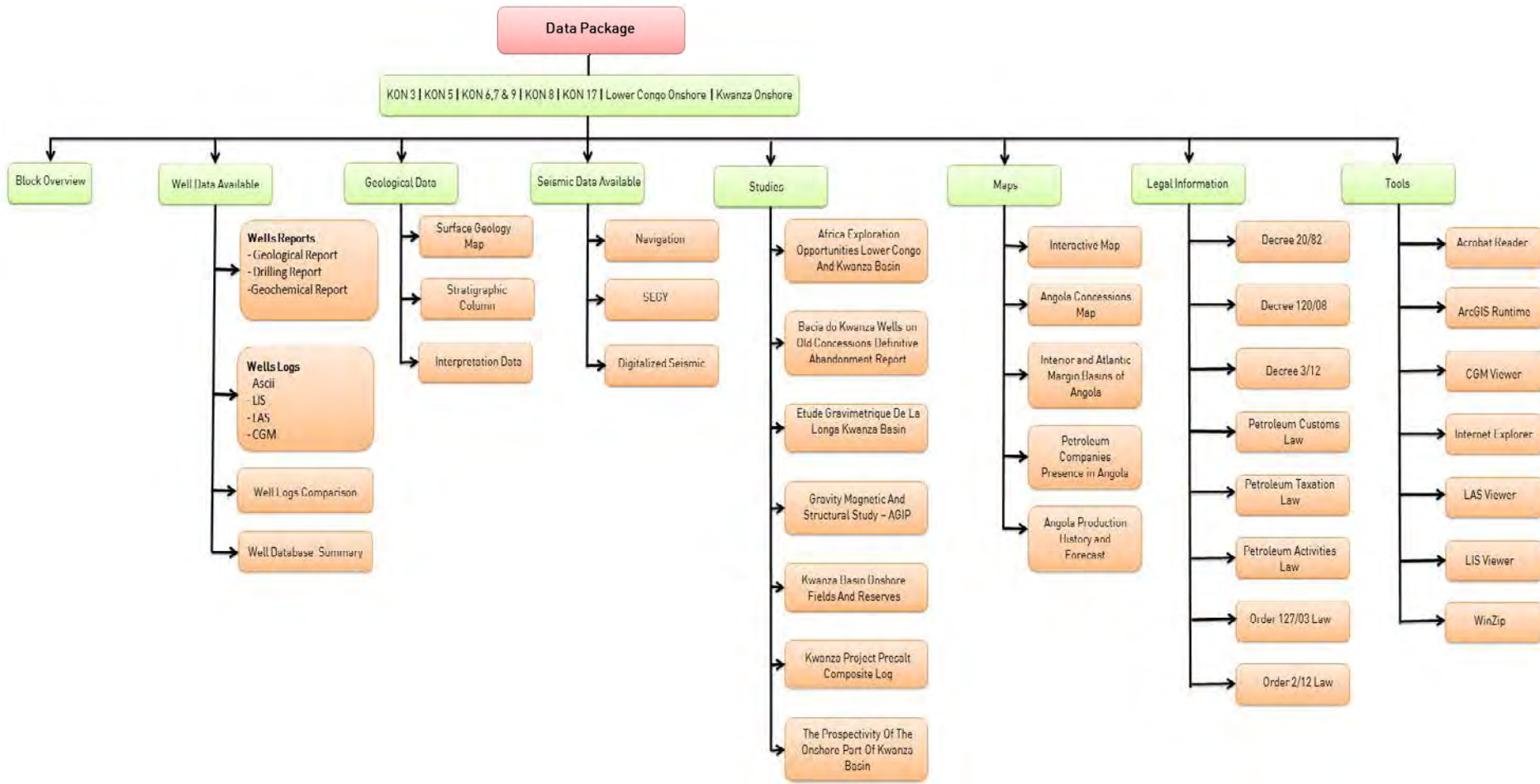


CON1, CON5, CON6

Kwanza Onshore Basin



KON3, KON5, KON6, KON7, KON8, KON9, KON17



Well Data

- Geological Report
- Drilling Report
- Geochemical Report
- Well Logs: ASCII, LIS, LAS and CGM

Studies

- Regional Studies Report
- Basins Prospectivity Studies Report
- Fields and Blocks Studies Report
- Definitive Resignations Report

Maps

- Interactive GIS Map
- Concessions Map
- Map of Oil Companies in Angola
- Historical and Forecast Chart of Oil Production in Angola

Seismic Data

- List of Programs and Seismic Lines
- Navigation Data : e.g. ASCII, Ukooa,
- Old Seismic Lines Scanned (80's)

Geological Data

- Surface Geologic Map
- Stratigraphic Column of the Kwanza and Congo Basins

Legal Information

- Law 127/03, The general regulatory framework for the contracting of goods and services from national state and/or private companies by companies in the Oil Sector.
- Law 2 /12, Law on foreign exchange regime applicable to the Petroleum Sector.
- Law 10/04, Petroleum Activities Law.
- Law 11/04, Petroleum Customs Law.
- Law 13/04, Law on Taxation of Petroleum Activities.
- Decree 48/06 , Approves the rules and procedures of public procurement in the oil sector.
- Decree 120/08, Establishes rules for access to land areas and acquisition of land rights with a view to implementation of oil operations in the territory of the Republic of Angola.
- Decree 3/12, Establishes tax incentives for National Companies in the Oil Sector.
- Decree 17/09, Fixes the amount of contributions to all foreign law firms and companies under Angolan law.

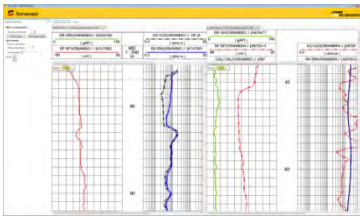
Well Data

- Well Reports

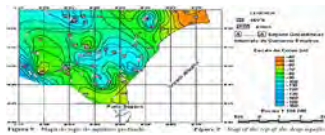


- Well Logs

- Log Comparisons Tool



- Well Database

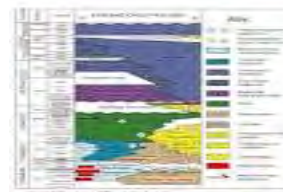


Geological Data

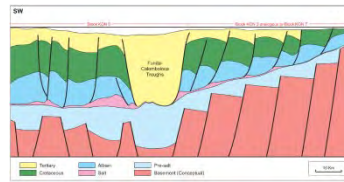
- Geological Maps



- Stratigraphy Column



- Interpreted Data



Geophysical Data

- Navigation

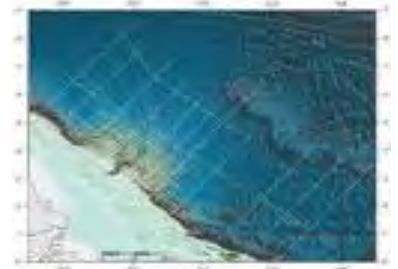
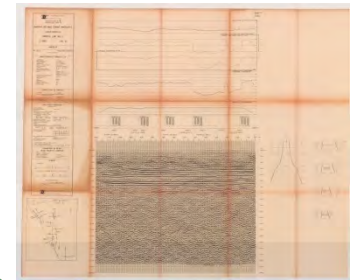


Figure 2: Mapa Antártico, escala de 1:500.000, de la Antártida y sus islas. Se muestra el contorno de la Antártida, las islas y archipiélagos circundantes, y el Polo Sur. Fuente: Instituto Geográfico Nacional (IGN) de España. Adaptado por el autor.

- Digitalized Seismic



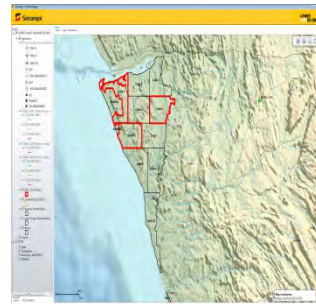
Studies

- Regional Reports

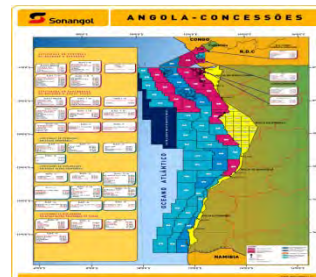


Maps

- Interactive GIS Map



- Sonangol Maps



Legal Information

- Laws and Decrees

Segunda-feira, 1 de Setembro de 2006 | Série — N.º 106

DIÁRIO DA REPÚBLICA

ÓRGÃO OFICIAL DA REPÚBLICA DE ANGOLA

Preço deste número — Kz. 60,00

ANNUALIDADES		Preço de cada número (incluindo o custo de impressão e o custo de distribuição)	
Ano	Preço	Ano	Preço
1.º ano	Kz. 400 700,00	1.º ano	Kz. 10,00
2.º ano	Kz. 200 000,00	2.º ano	Kz. 10,00
3.º ano	Kz. 100 000,00	3.º ano	Kz. 10,00
4.º ano	Kz. 50 000,00	4.º ano	Kz. 10,00
5.º ano	Kz. 25 000,00	5.º ano	Kz. 10,00

IMPRESSA NACIONAL - E. P.
Rua Henrique de Carvalho, n.º 2
Caixa Postal n.º 1264

CIRCULAR

Excelsíssimos Senhores:

Havingo necessidade de se evitarem os inconvenientes que resultam para os nossos serviços de facto das respectivas assinaturas no Diário da República não serem lidas com a devida oportunidade.

Para que não haja interrupção no funcionamento do Diário da República nos estranhos dias, antes e depois de férias, que estão a ser a partir desta data até 15 de Dezembro de 2006, os respectivos assinaturas para o ano de 2007 pelo que deverão providenciar a regularização dos seus pagamentos junto dos nossos serviços.

1. Os preços das assinaturas de Diário da República, no território nacional, passam a ser os seguintes:

1.º ano	Kz. 400 275,00
2.º ano	Kz. 216 250,00
3.º ano	Kz. 123 500,00
4.º ano	Kz. 95 700,00

2. As assinaturas serão lidas apenas no seguinte prazo:

3. As prazos mencionados no n.º 1 acresce-se a um valor adicional para o custo de envio por via aérea, das várias vezes, para todo o ano, no valor de Kz. 75 075,00 que poderá sofrer eventual alteração em função da alteração das taxas a praticar pela Empresa Nacional de Correios de Angola, E. P., no ano de 2007. Os clientes que optarem pela recepção das suas assinaturas através do correio directo indicam o seu endereço completo, incluindo o Caixa Postal, a fim de se evitarem atrasos na sua entrega, devolução ou extravio.

SUMÁRIO
Conselho de Ministros

Após o processo de procedimento administrativo público no âmbito do Decreto n.º 49/06

Norma, para um modelo de lei, no âmbito do Conselho de Administração da Caixa de Angola - TABCA - E. P.

CONSELHO DE MINISTROS

Decreto n.º 48/06
de 1 de Setembro

A Lei n.º 10/04, de 12 de Novembro, Lei das Actividades Periféricas, actua de forma explícita e princípio do concurso público como processo necessário o

Blocks Summary

Regional and Petroleum Geology

The Lower Congo Basin is one of the classic passive margin basins of the West African margin that developed as a result of the rifting of Gondwanaland during the Mesozoic.

This rift-to-drift margin formed as a product of the separation of South America and Africa and the formation of the South Atlantic. Traditionally four megasequences are recognised in the tectono-stratigraphy corresponding to pre-rift, rift, transitional and drift phases of development, with a salting Aquion salt horizon formed at the end of the transitional phase.

Pre-Late Jurassic age continental clastics were deposited unconformably on the Neoproterozoic basement, which was later faulted during rifting. Rift related sediments were deposited over these, topped by thick deltaic salt. Post-salt Cretaceous units, predominantly composed of carbonates, have salt down dip, opening elongated troughs filled with Cretaceous sediments. Though these are reduced in magnitude to the east. There is extensive growth faulting within the Post-salt Cretaceous and Senozoic (predominantly post-salt) intervals.

Working petroleum systems have been identified throughout the basin, in both pre- and post-salt sediments. Unroofed working reservoir intervals occur in the Albin, Late Cretaceous and Senozoic.

Exploration history

Surface hydrocarbon indications in the form of oil seeps and asphalt deposits have been known for at least 200 years. The first systematic exploration of the basin began in the early 1900s with a major drilling campaign by Shell from 1915 onwards. During this period, 8 wells were drilled in the southern part of the onshore basin with one discovery. The legend discovery did not achieve hydrocarbon flow to the surface.



With the advent of reflection seismic a second exploration drilling phase took place from the 1950s to the 1980s until interest became increasingly focused on exploring the offshore part of the Lower Congo Basin. This campaign resulted in the discovery of 11 producing fields within the Onshore Lower Congo Basin. There are 7 oilfields which are still in production today under the operation of Sonat.

Content Listing

- A - Seismic lines and shot points
- B - Well data base, well reports and well logs
- C - Geological Data
- D - Studies
- E - Maps
- F - Legal Information

A - SEISMIC LINES AND SHOT POINTS

Block CON 1 Seismic Surveys:

Survey 20-8807008 - 4 seismic lines for a total of 60.23 Km.

Survey	Line Name	SP Full Line	Shot Full Line
20-8807008	7942-2008-01	1.170	29.78
20-8807008	7942-2008-02	1.170	19.88
20-8807008	7942-2008-03	1.170	11.20
20-8807008	7942-2008-04	1.170	15.38
20-8807008	7942-2008-05	1.170	18.13
20-8807008	7942-2008-06	1.170	18.28
TOTAL		6.840	144.85 Km.

Survey 20-8807009 - 14 seismic lines for a total of 321.72 Km.

Survey	Line Name	SP Full Line	Shot Full Line
20-8807009	7942-2008-07	1.170	29.78
20-8807009	7942-2008-08	1.170	9.78
20-8807009	7942-2008-09	1.170	11.20
20-8807009	7942-2008-10	1.170	10.20
20-8807009	7942-2008-11	1.170	20.20
20-8807009	7942-2008-12	1.170	10.20
20-8807009	7942-2008-13	1.170	24.71
20-8807009	7942-2008-14	1.170	10.20
20-8807009	7942-2008-15	1.170	10.20
20-8807009	7942-2008-16	1.170	18.21
20-8807009	7942-2008-17	1.170	10.20
20-8807009	7942-2008-18	1.170	10.20
20-8807009	7942-2008-19	1.170	18.20
20-8807009	7942-2008-20	1.170	10.20
20-8807009	7942-2008-21	1.170	20.20
20-8807009	7942-2008-22	1.170	18.20
TOTAL		16.380	361.72 Km.

Survey 20-8807010 - 4 seismic lines for a total of 161.71 Km.

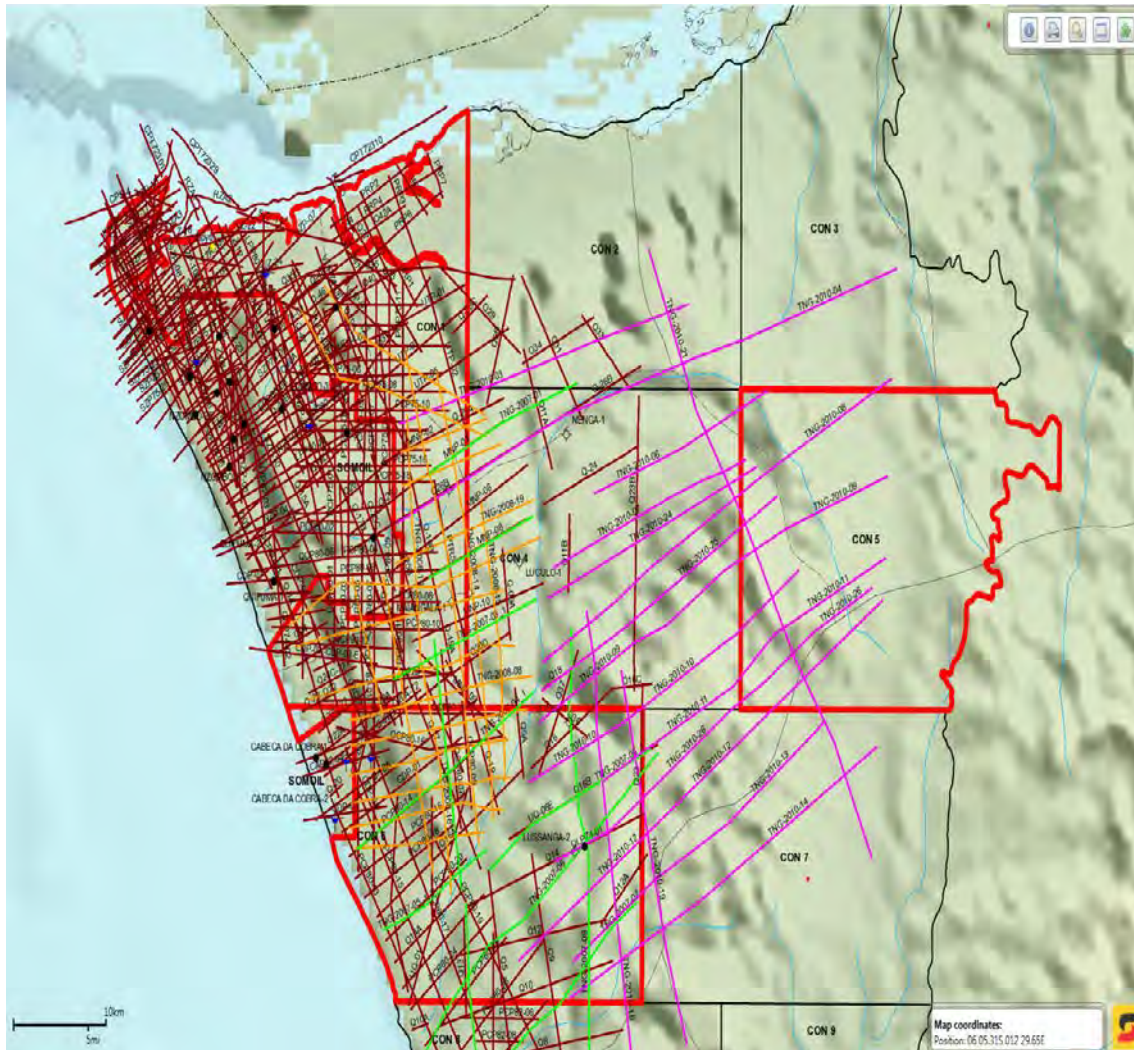
Survey	Line Name	SP Full Line	Shot Full Line
20-8807010	7942-2008-23	1.170	18.13
20-8807010	7942-2008-24	1.170	15.74
20-8807010	7942-2008-25	1.170	18.74
20-8807010	7942-2008-26	1.170	19.10
TOTAL		4.680	161.71 Km.

20 - Legacy seismic digitalized: 44 seismic lines for a total of 210.92 Km.

Survey	Line Name	SP Full Line	Shot Full Line	Seismic Digitalized
20-8807008	7942-2008-01	1.170	29.78	0
20-8807008	7942-2008-02	1.170	19.88	0
20-8807008	7942-2008-03	1.170	11.20	0
20-8807008	7942-2008-04	1.170	15.38	0
20-8807008	7942-2008-05	1.170	18.13	0
20-8807008	7942-2008-06	1.170	18.28	0
20-8807009	7942-2008-07	1.170	29.78	0
20-8807009	7942-2008-08	1.170	9.78	0
20-8807009	7942-2008-09	1.170	11.20	0
20-8807009	7942-2008-10	1.170	10.20	0
20-8807009	7942-2008-11	1.170	20.20	0
20-8807009	7942-2008-12	1.170	10.20	0
20-8807009	7942-2008-13	1.170	24.71	0
20-8807009	7942-2008-14	1.170	10.20	0
20-8807009	7942-2008-15	1.170	10.20	0
20-8807009	7942-2008-16	1.170	18.21	0
20-8807009	7942-2008-17	1.170	10.20	0
20-8807009	7942-2008-18	1.170	10.20	0
20-8807009	7942-2008-19	1.170	18.20	0
20-8807009	7942-2008-20	1.170	10.20	0
20-8807009	7942-2008-21	1.170	20.20	0
20-8807009	7942-2008-22	1.170	18.20	0
TOTAL		163.800	361.72 Km.	44

Minimum Requirements to run the DVD Data Package

- Processador**
Intel Pentium 4
Mínimo
- CPU Speed**
2.2GHz
Mínimo
- Memoria RAM**
2GB
Mínimo
- Espaco em Disco**
24GB
Mínimo
- Screen Resolution**
1024 X 768
(96 dpi)
- Placa Gráfica**
64 MB - RAM
Mínimo
- Display Properties**
24 Bit Colour
Depth
- Sistema Operativo**
Windows 7
32 Bit ou 64 Bit
- Software de Suporte**
 1. Acrobat Reader 11 - (Incluído no DVD)
 2. Microsoft Word & Excel
 3. IE 9 - Mínimo
 4. CSM Viewer - (Incluído no DVD)
 5. LAS Viewer - (Incluído no DVD)
 6. LIS Viewer - (Incluído no DVD)
 7. WinZip - (Incluído no DVD)
- Hardware Device**
DVD Drive

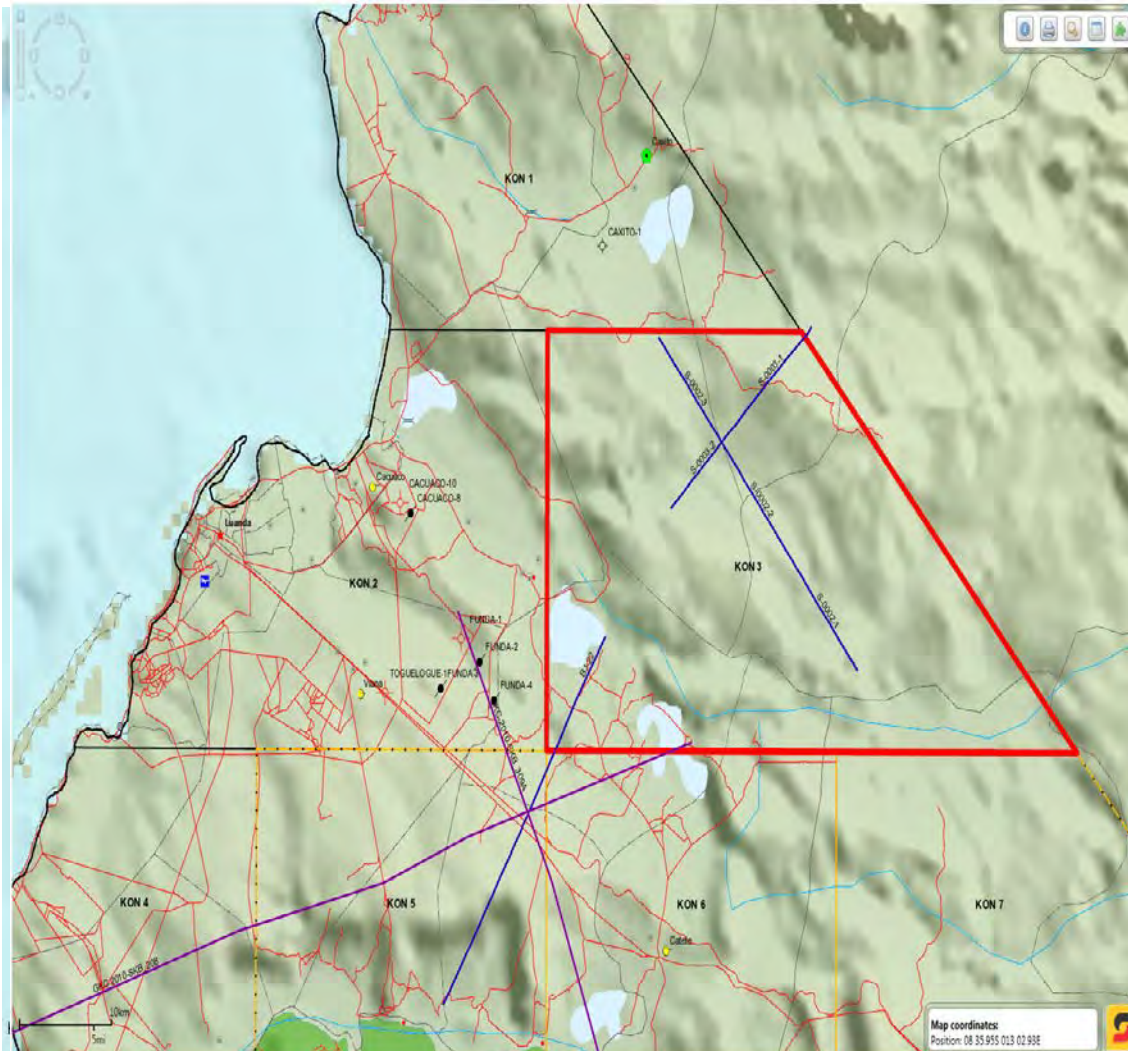


54 Wells

- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 2.501,29 Kms (Contact Vendors)

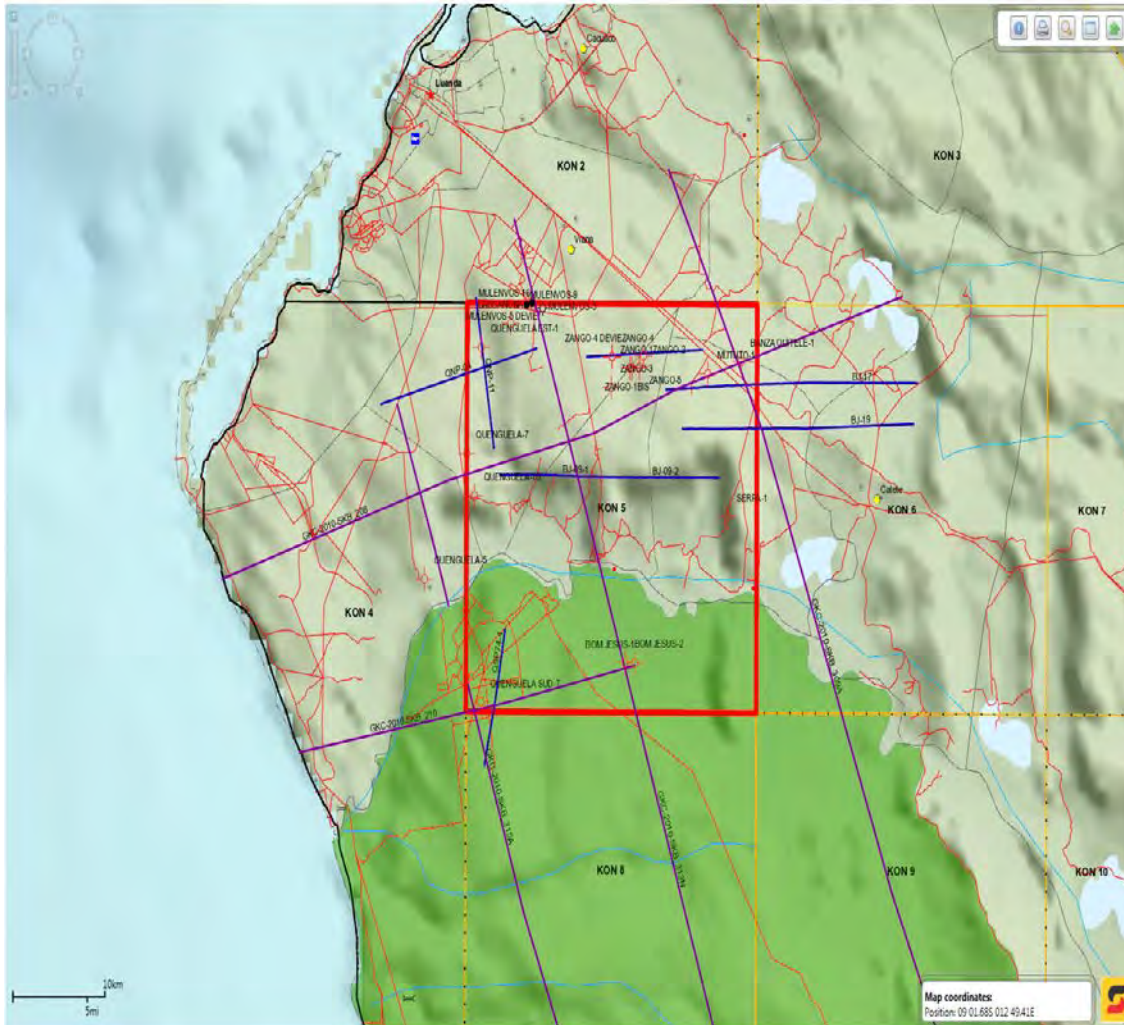


8 Wells

- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 526,23 Kms (Contact Vendors)

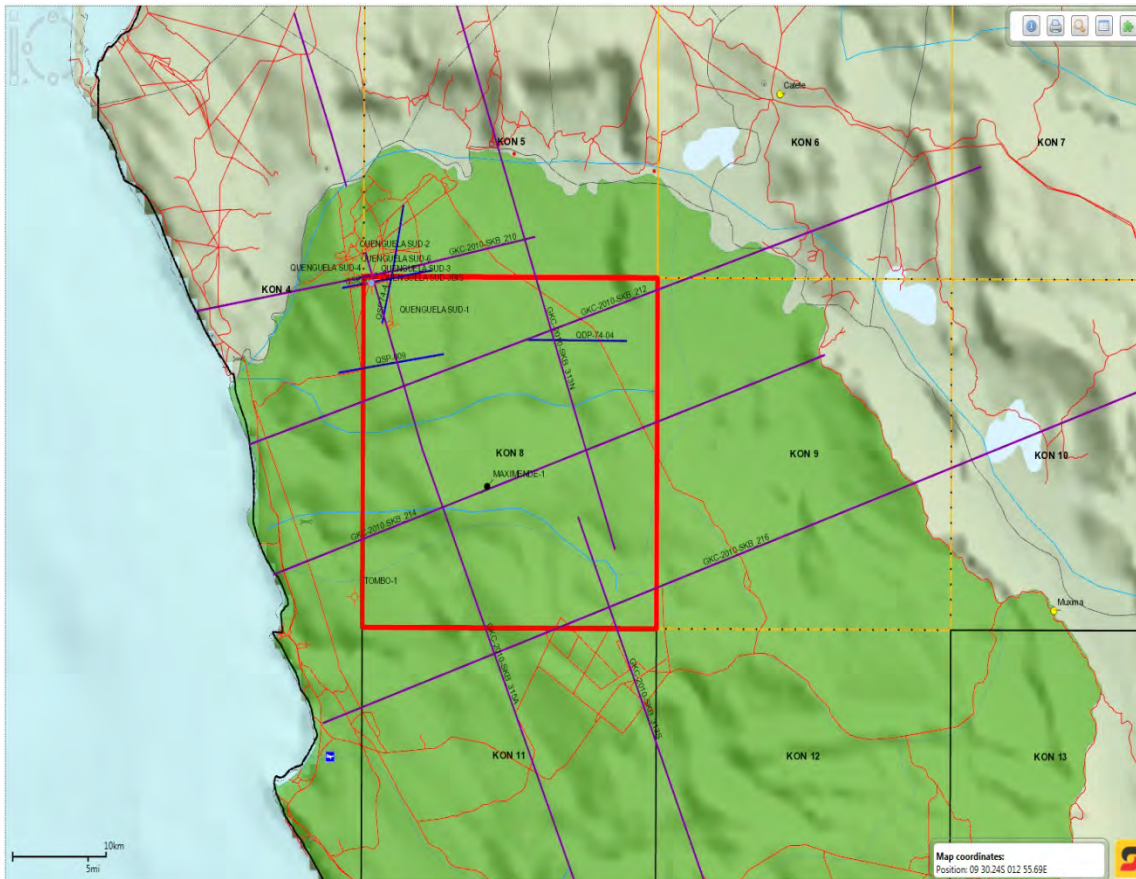


22 Wells

- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 908,77 Kms (Contact Vendors)

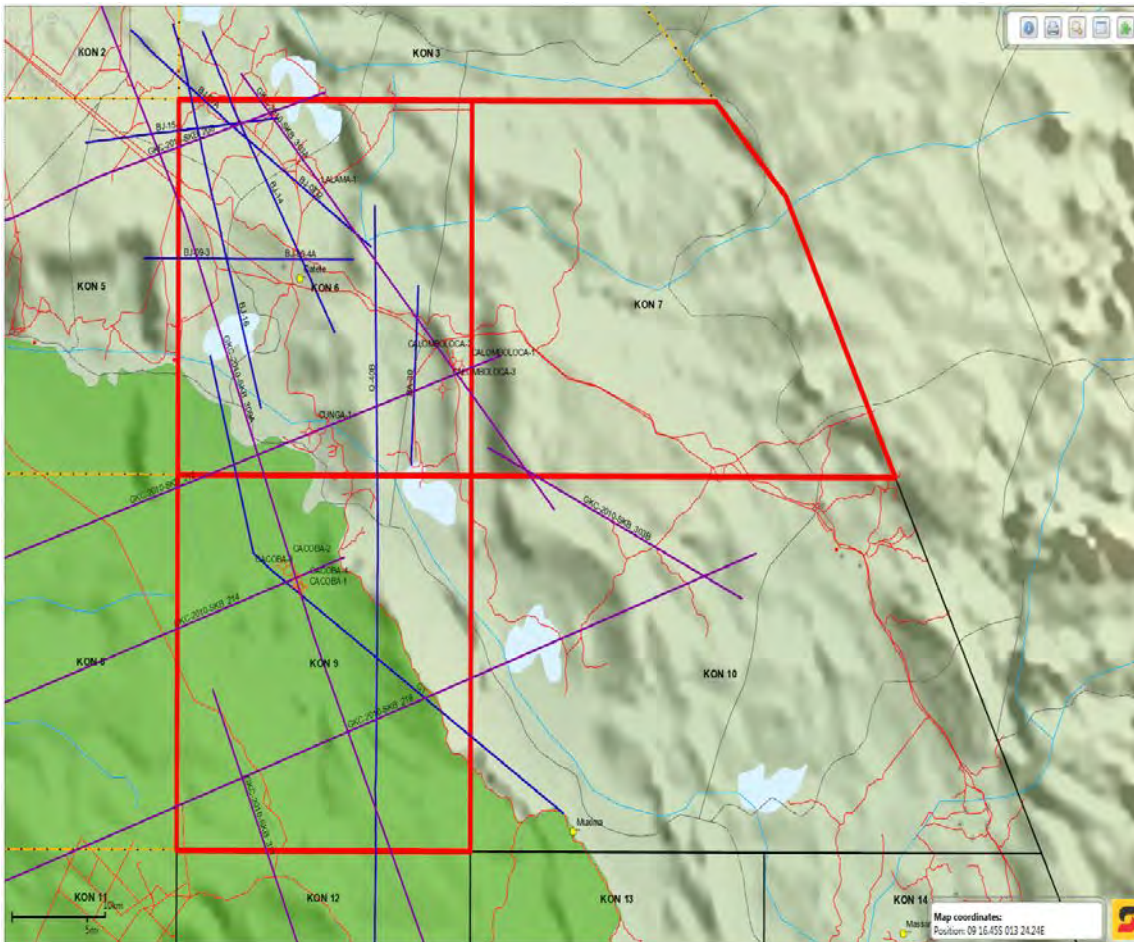


8 Wells

- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 803.81 Kms (Contact Vendors)

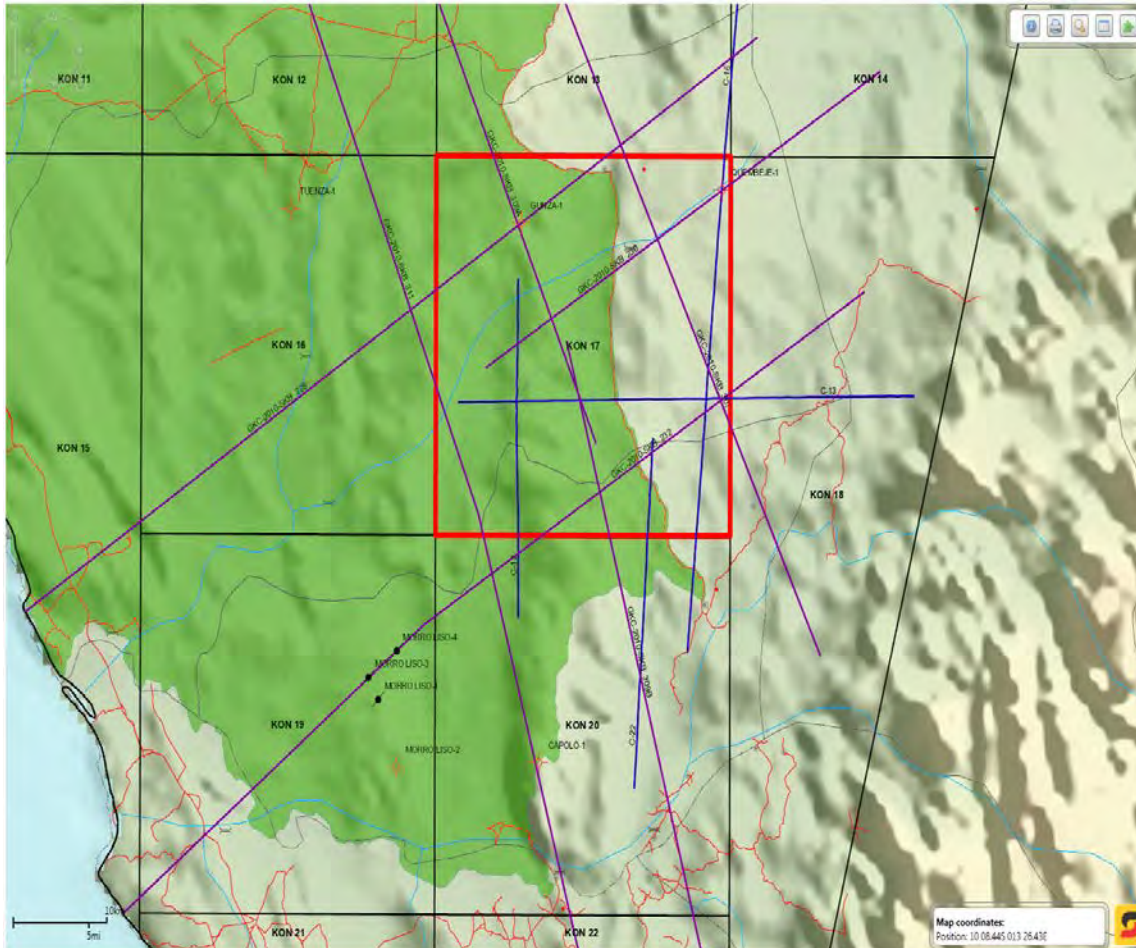


9 Wells

- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 1,660.62 Kms (Contact Vendors)



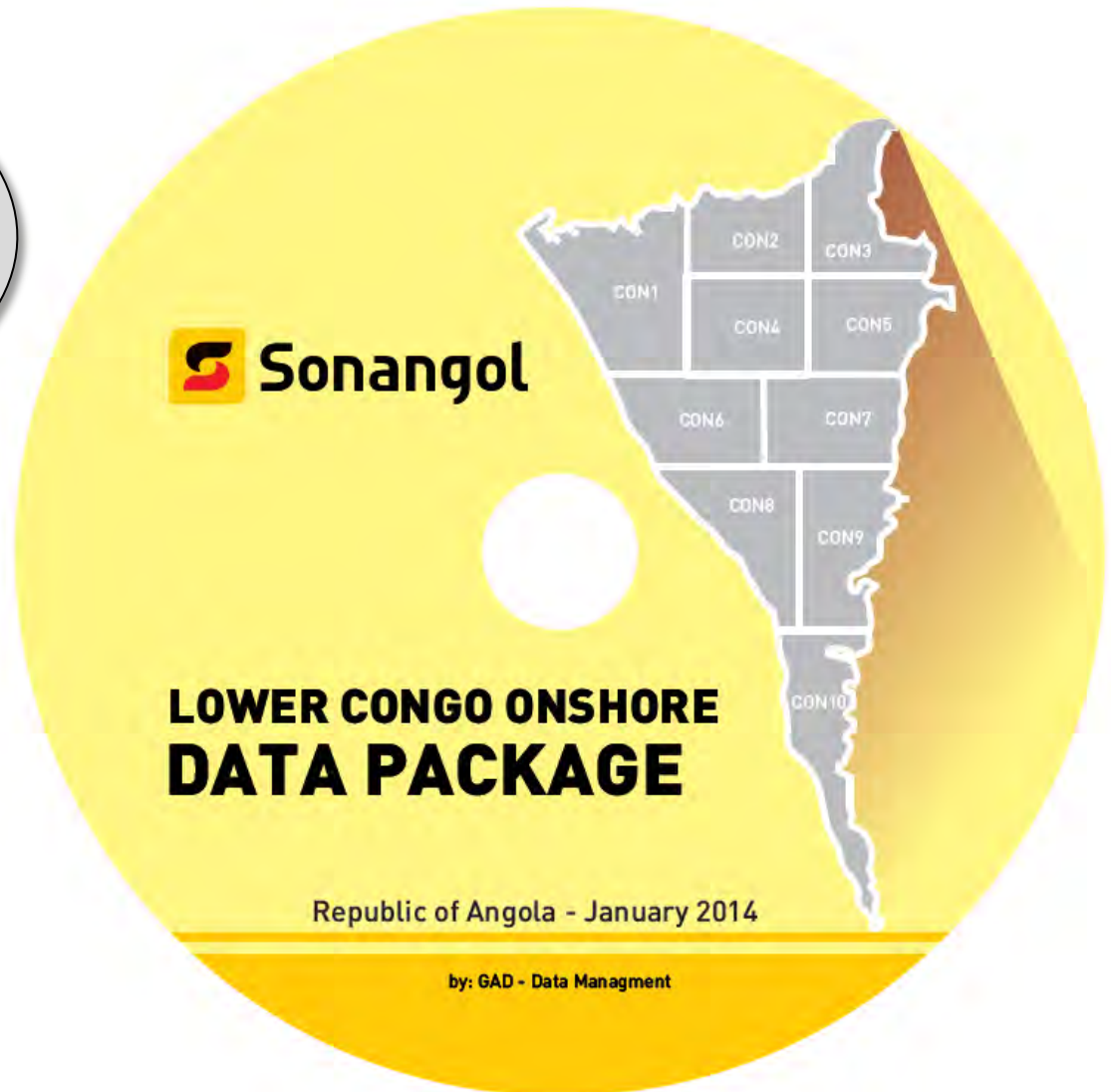
9 Wells


- Geological Reports
- Drilling Reports
- Geochemical Reports
- Biostratigraphic Reports
- Well Logs LAS, LIS and CGM

Seismic 2D

- 1,147.50 Kms (Contact Vendors)

How will the
data be
provided?





**LOWER CONGO ONSHORE
DATA PACKAGE**

Republic of Angola - January 2014

by: GAD - Data Management

Processor

Intel Pentium 4

CPU Speed

2.2 GHz

Memory - RAM

2 GB

Hard Disk

2.4 GB

Screen Resolution

1024 X 768
(96 dpi)

Graphics Card

64 MB - RAM

Display Properties

24 Bit Colour
Depth

Operating System

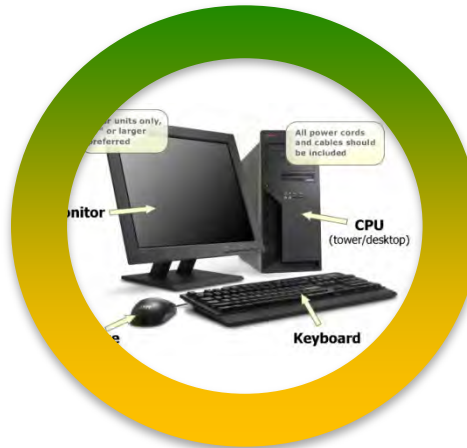
Windows 7
32 Bit or 64 Bit

Supporting Software

1. Acrobat Reader 11- (Included onDVD)
2. Microsoft Word & Excel
3. IE 9
4. CGM Viewer - (Included onDVD)
5. LAS Viewer - (Included onDVD)
6. LIS Viewer - (Included onDVD)
7. WinZip - (Included onDVD)

Hardware Device

DVD Drive



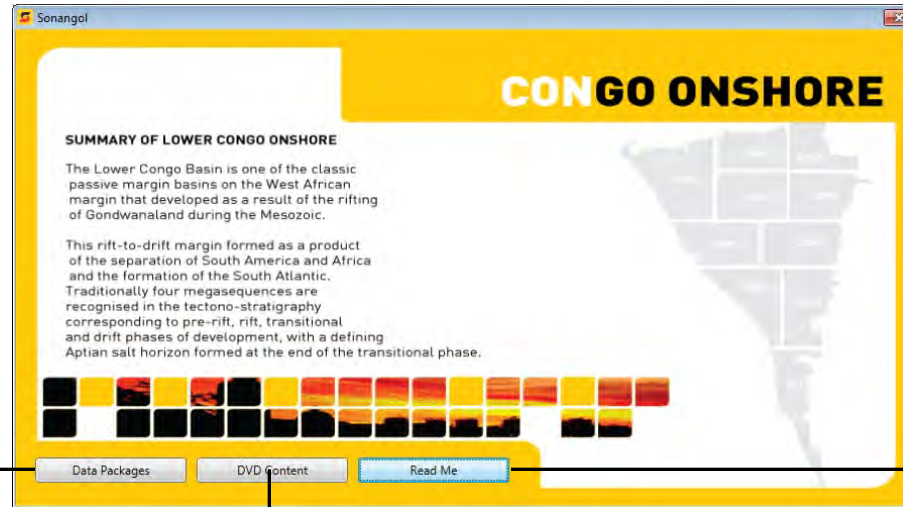


Fig. 1.1

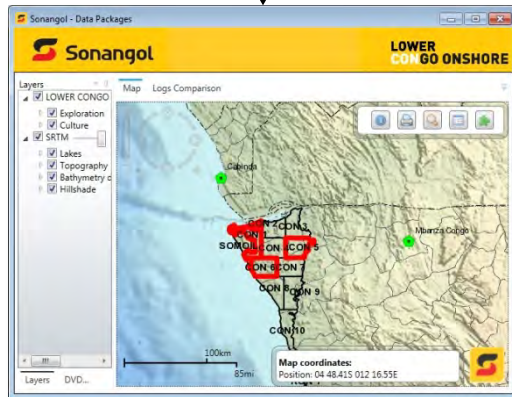
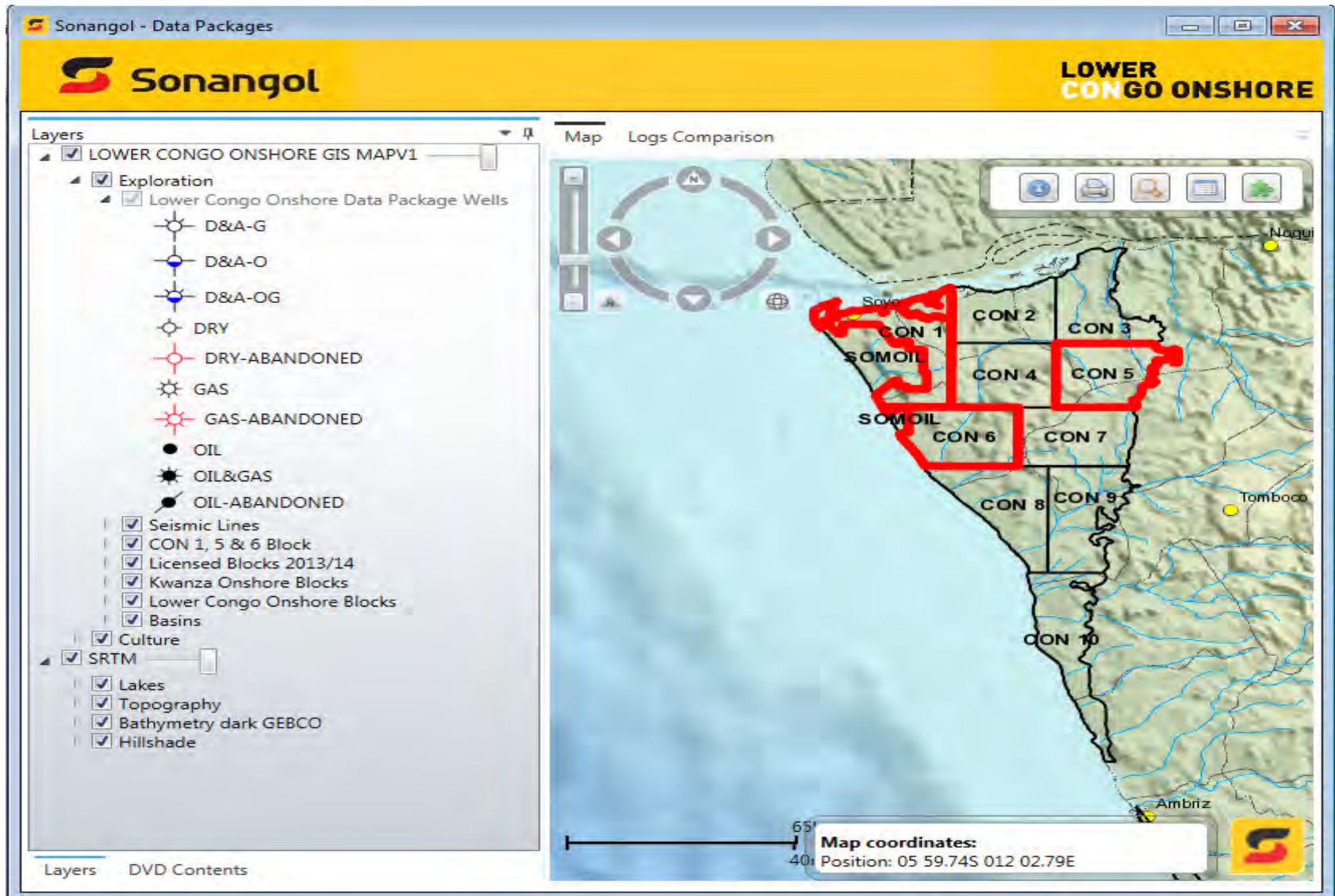


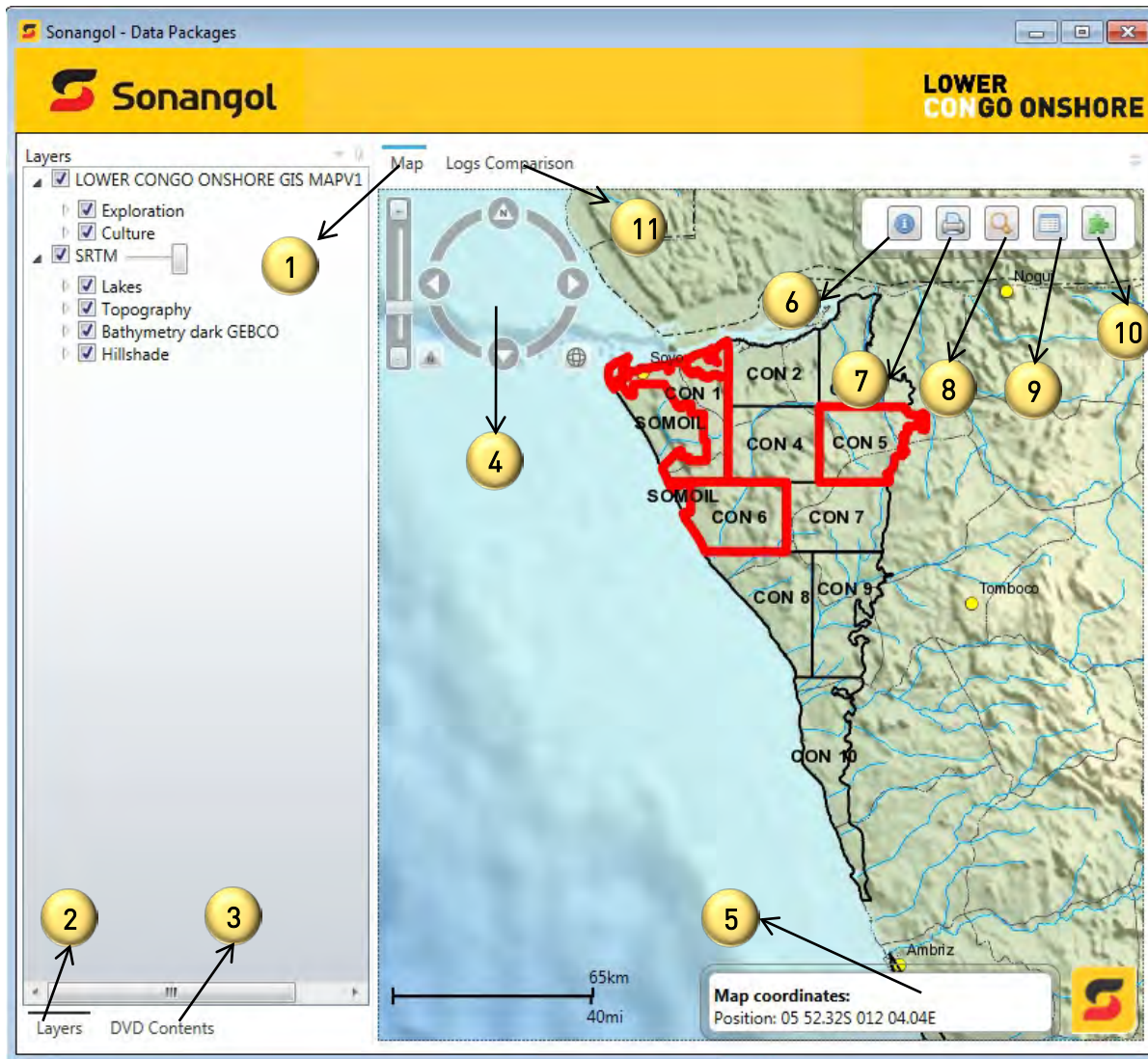
Fig. 1.2








- 1. Block Overview
- 2. Content List
- 3. Well Data
- 4. Geological Data
- 5. Seismic Data
- 6. Studies
- 7. Maps_Regional Maps and Basemaps
- 8. Legal Information
- 9. Read Me
- Basin Montages and Geochemistry
- Tools

Fig. 1.3

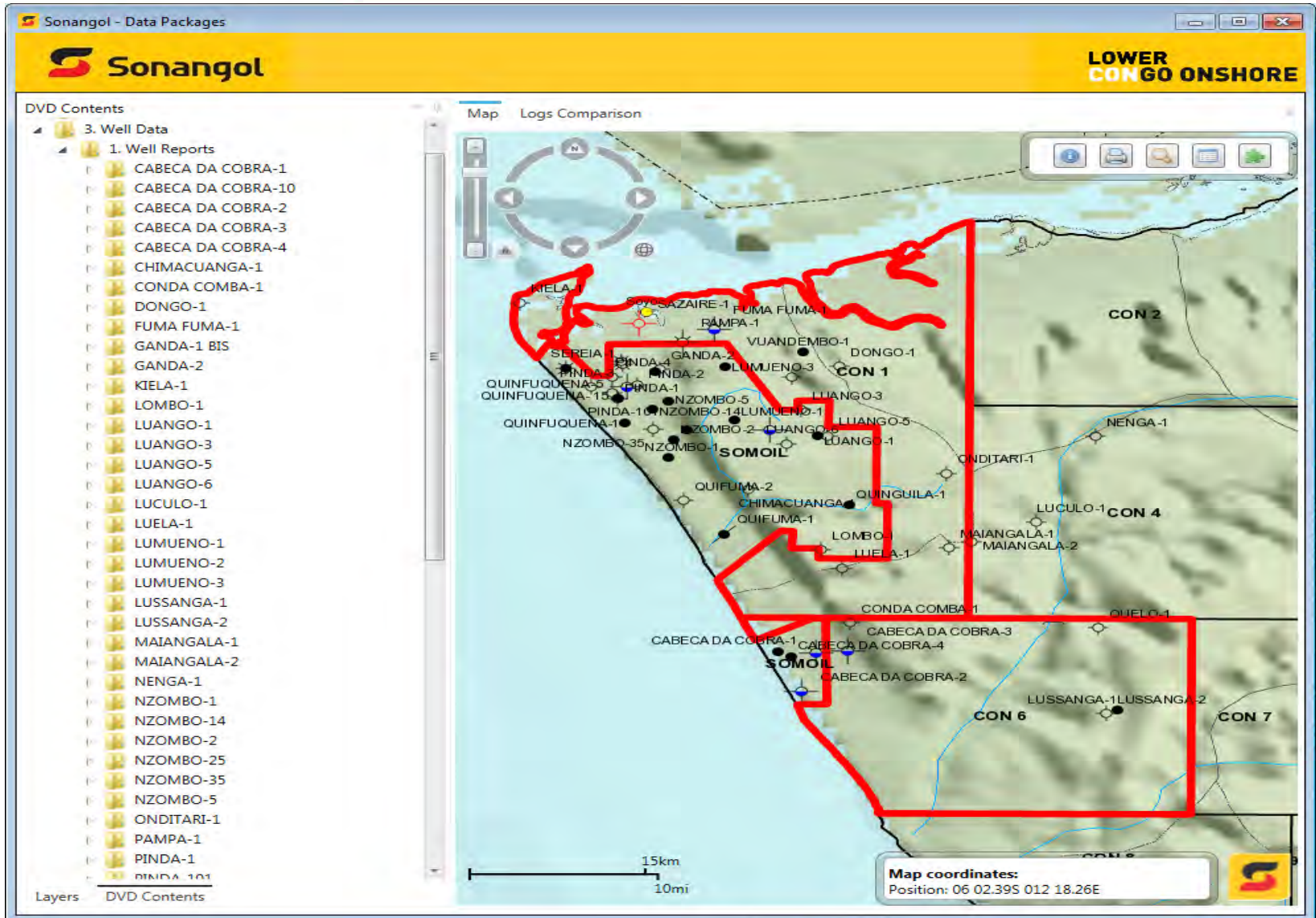




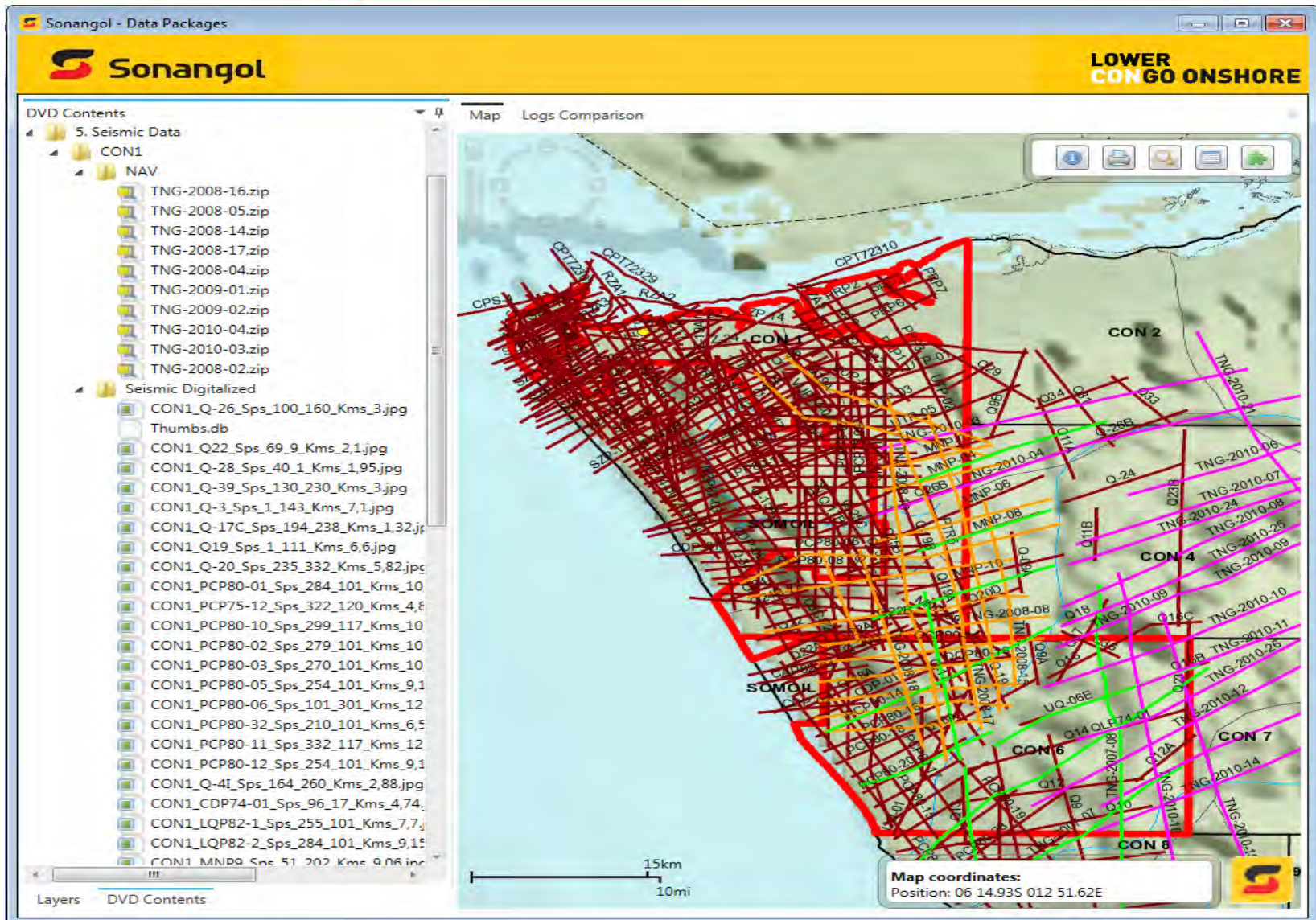


1. Interactive Map
2. Interactive Map Layers
3. DVD Content
4.  Navigation Tool lets you view the map in different angles, zoom in and zoom out.
5. Map Coordinates will display the coordinates of the mouse pointer anywhere on the map.
6.  Identifier Selecting this tool and pointing to a location on the map will display detailed information about the area.
7.  Print Map allows to print a desired area on the map.
8.  Search works as a search engine, making it easier to find information in the Data Package
9.  Attribute Table is used to find information using refined queries.
10.  Measurement Tool is used to measure a selected area or from one location to another and the result is displayed in Kilometers or square kilometers
11.  Well Logs Comparison is used to compare log curves, and can be compared to 3 logs at the same time.

REPRESENTATION OF AVAILABLE WELLS ON THE INTERACTIVE MAP



REPRESENTATION OF AVAILABLE SEISMIC LINES ON THE INTERACTIVE MAP





Angola License Round 2013/14



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General Manager

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United Kingdom

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+44 7825 185074 (mobile)
+44 1932 376365 (direct)
www.pgs.com



LEGAL AND CONTRACTUAL FRAMEWORK

**Suzel Alves
Negotiations Director**

LEGAL FRAMEWORK

- PETROLEUM ACTIVITIES LAW
- COMPLEMENTARY DIPLOMAS
- PETROLEUM CUSTOMS LAW
- TAXATION OF PETROLEUM ACTIVITIES LAW
- FOREIGN EXCHANGE REGULATIONS
- CONCESSION DECREE
- NATIONAL COMPANIES INCENTIVES

CONTRACTUAL FRAMEWORK

- CONCESSIONS CONTRACT
- RISK SERVICE CONTRACT
- PRODUCTION SHARING CONTRACT

LEGAL AND CONTRACTUAL FRAMEWORK

LAND ACCESS

- DECREE N°120/08, DECEMBER 22nd
- SAFEGUARDING OF NATIONAL INTERESTS
- NEGOCIATION AND CONCILIATION

BIDDING ROUND PROCESS

- PHASES OF BIDDING ROUND PROCESS
- IMPORTANT DATES
- PUBLIC TENDER LAUNCH
- PROPOSALS
- NEGOTIATIONS COMMITTEE

❑ Law n° 10/04, November 12th (Petroleum Activities Law)

- ❖ State ownership of natural resources;
- ❖ Principle of exclusivity of National Concessionaire;
- ❖ Non-transferability of mining rights;
- ❖ Obligation for association and mandatory bids;
- ❖ Types of association;
 - ✓ Commercial company, consortium agreement, production sharing contract;
 - ✓ (The National Concessionaire may enter into a Risk Services Contracts to conduct petroleum activities.)

- ❖ **Management of petroleum operations**
 - ✓ In the associations with third parties, the National Concessionaire has the right to participate in the management of petroleum operations;

- ❖ **Obligatory risk**
 - ✓ The investments are made by the Associates of the National Concessionaire, and they can only recover costs in case there is a commercial discovery;

- ❖ **Prospecting license;**
 - ✓ Acquisition of data regarding the oil potential of a specific area;

- ❖ **Petroleum concession**
 - ✓ Assigned by Decree to the National Concessionaire.

Regulations for the Petroleum Activities Law

- ❖ Decree n° 48/06, September 1st
Establishes the rules and procedures governing public tenders for the petroleum sector;
- ❖ Decree n° 120/08, December 22nd
Establishes the rules governing access to onshore areas and the acquisition of land rights for petroleum operations;
- ❖ Presidential Decree n° 297/10, December 2nd
Establishes the rules and procedures for limited public tenders for the acquisition of National Concessionaire associate status.

- ❑ Law n° 11/04, November 12th - Petroleum Customs Law
 - ❖ Exemptions on import of goods related to the petroleum operations;
 - ❖ Exemptions on export of oil produced in each concession;
 - ❖ Protection of the Angolan national market;
 - ✓ Goods imported under this regime must be applicable exclusively in the petroleum operations.

❑ Law n° 13/04, December 24th – Taxation of Petroleum Activities Law

- ❖ Fiscal Regime of the Production Sharing Contract
 - ✓ Petroleum Production Tax (50%);
 - ✓ Ring Fencing;
 - ✓ Cost Oil;
 - ✓ Surface Area Charge (300 USD/Km²);
 - ✓ Contributions towards the training of Angolan Staff (Decree Law n° 19/07, June 26th).

□ Law n° 2/12, January 13th - Foreign Exchange Regulations Applicable to the Petroleum Sector

❖ National and Foreign Oil Companies

- ✓ Oil operations in Angola have to be processed through local banks;
- ✓ Settlement of foreign exchange transactions must be conducted through local bank institutions headquartered in the country;
- ✓ Payments for goods and services provided by resident foreign contractors and service providers have to be made in local currency;
- ✓ All payments for goods and services provided by foreign residents, must be made through Angolan bank accounts , in national or foreign currency;
- ✓ Foreign companies may hold in foreign currency the corresponding funds referent to profits or dividends in banking institutions outside the country;

Concession Decree Model

- ❖ Allocation of mining rights to the National Concessionaire;
- ❖ Description of the concession area;
- ❖ Duration of the concession and of the different phases and periods;
- ❖ Identification of the operator;
- ❖ Approval of the Production Sharing Contract (in case the National Concessionaire associates with a third party).

- ❑ Presidential Legislative Decree n° 3/12 , March 6th
Incentive regime for Angolan oil companies in order to guarantee real and effective participation in petroleum operations.
 - ❖ **Validity**
After March 16, 2012, and only for Angolan oil companies that are shareholders in petroleum contracts.
 - ❖ **Scope**
 - ✓ Publicly owned oil company;
 - ✓ Private oil company (any commercial Angolan company consisting of members that are of Angolan nationality, which together are the holders of 100% of the share capital of the company and which company purpose is the exercise of petroleum operations).

❖ Tax Incentives on Oil Contracts

- ✓ If they are associated with the National Concessionaire in production sharing contracts, they benefit from a reduced rate of income tax of 50% of the oil for a rate equivalent to the prevailing rate of industrial tax;
- ✓ If they are associated with the National Concessionaire under other types of oil contracts, they benefit from the reduced rate of tax on income of Petroleum 65.75% to a rate equivalent to the prevailing rate of industrial tax.

❖ Exemptions

- ✓ Exemption from payment of signature bonus;
- ✓ Exemption from the obligation of financing of the Subsidiary of the National Concessionaire;
- ✓ Exemption from contributions to social projects.

Note: Companies that benefit from incentives can not, under penalty of loss of these incentives, assign all or part of their capital to foreign part(s).



CONTRACTUAL FRAMEWORK

Helder Nuno Lisboa
Head of Hydrocarbons Concessions Department

Concession Contract

- Parties involved
 - National Concessionaire and Contractual Group
- Legal nature
- Operating committee
- Concessions in which prevails

Risk Service Contract

- Parties involved
 - National Concessionaire and Contractual Group
- Legal nature
- Concessions in which prevails

Production Sharing Contract*

- Balance in case of fluctuation of production volume and/or price of barrel
- To be used in Licensing Round 2014

* Production Sharing Contract (PSA)

- ❖ Parties involved: National Concessionaire and Contractor Group;
- ❖ All expenses regarding oil operations are paid by the Contractor Group;
- ❖ Contractual periods: Exploration and Production;
- ❖ Minimum work obligations;
- ❖ Bonus and contributions;
- ❖ Limit for Cost Recovery;
- ❖ Profit oil split
 - ✓ Cumulative Production;
 - ✓ Internal Rate of Return (IRR).

* Production Sharing Contract (Cont.)

- ❖ Investment Premium (applied on the development expenses);
- ❖ Ownership of Assets;
- ❖ Areas of Development and Contract;
- ❖ Operations Committee;
- ❖ Gas Regime;
- ❖ Arbitration;
- ❖ Applicable Law;
- ❖ Language.

Bidding Round Phases

Importante Dates

Public Tender Launch

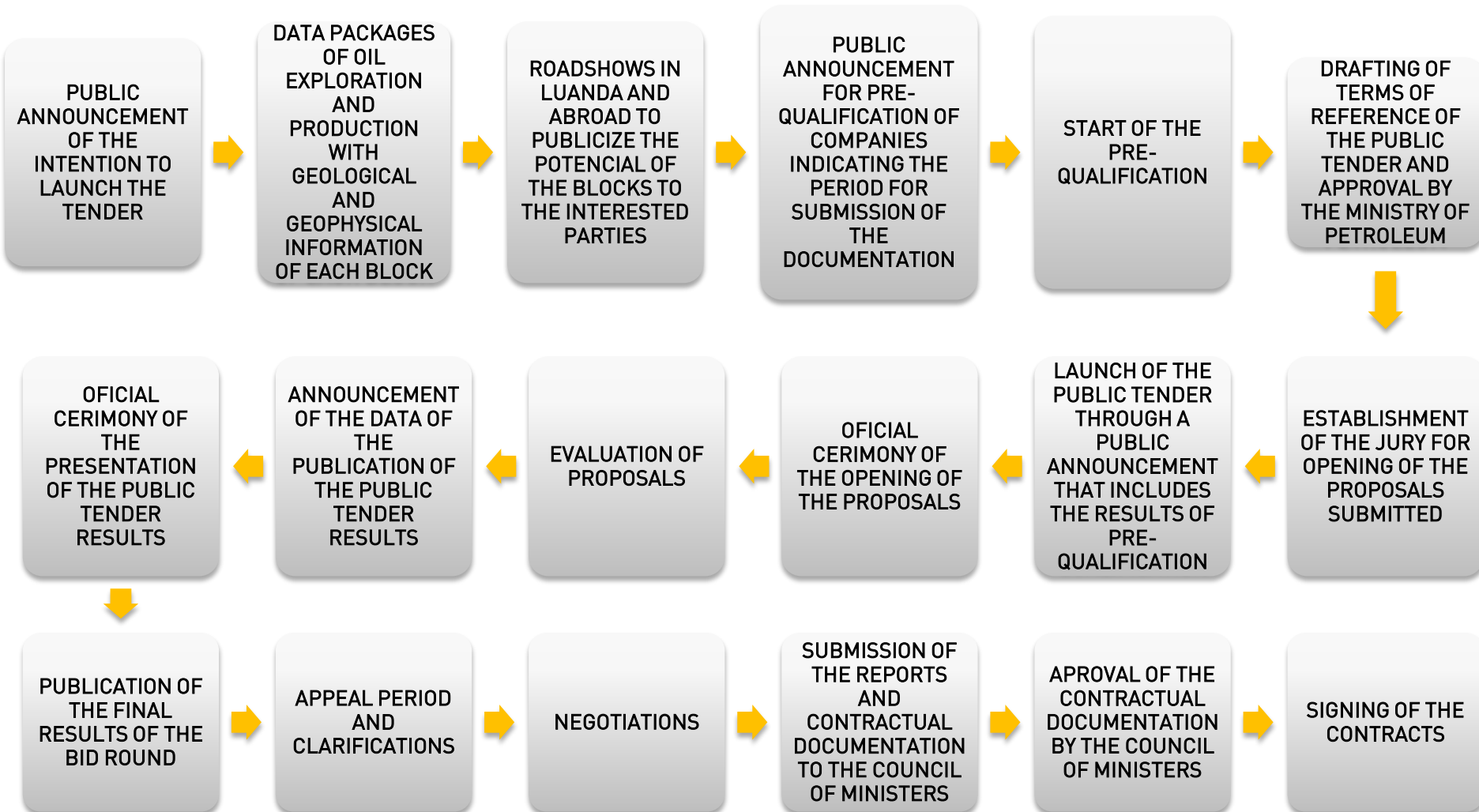
Proposals

Negotiations Committee

Important Dates

- ❖ Start date of the pre-qualification period – February 24th, 2014;
- ❖ End date of the pre-qualification period –March 25th, 2014;
- ❖ Publication of the pre-qualification results –April 24th, 2014;
- ❖ Public tender launch –April 24th, 2014;
- ❖ Last day for submitting the proposals–July 22nd, 2014;
- ❖ Public ceremony for the proposals opening–July 23rd, 2014;
- ❖ Public ceremony of the bid round final results –September 10th, 2014;
- ❖ Contract negotiation – from September 21st to October 16th, 2014;
- ❖ Government approval of the contractual documents – November 17th, 2014;
- ❖ Contracts signature ceremony –December 14th, 2014.

Bidding Round Phases Outline



Public Tender Launch

Public Announcement

- ❖ Concession area description;
- ❖ Deadline for submitting proposals;
- ❖ List of pre-qualified companies;
- ❖ Terms of reference;
 - ✓ Mandatory work program;
 - ✓ Limit for Cost Recovery;
 - ✓ Profit oil share;
 - ✓ Signature bonus;
 - ✓ Contributions for social projects;
 - ✓ National Content participation.
- ❖ Contract model;
- ❖ Proposals Submission Procedures .

Proposals Submission

- ❖ Language
 - ✓ Portuguese or any other language, with an official Portuguese translation;
- ❖ Closed sealed envelope;
- ❖ Public opening of all proposals;
- ❖ 30 days to evaluate the proposals;
- ❖ Public announcement of the proposals results.

Negotiations Committee

- ❖ Constitution
 - After the Contractor Group has been approved.
- ❖ Members
 - Sonangol (President);
 - Petroleum Ministry;
 - Finance Ministry.
- ❖ Objective
 - Finalize contract;
 - 90 days period for initialing the contract with the Contractor Group;
 - Submit initialed documents to the Petroleum Ministry to obtain approval from the Council of Ministers.



LAND ACCESS

Alfredo Narciso

Head of Projects Investment Department

Legal**Decree****Congo Basin****CON 1****CON 5****CON 6****Kwanza Basin****KON 3****KON 5****KON 6****KON 7****KON 8****KON 9****KON 17**

❑ Decree n° 120/08, December 22nd

Establishes the rules for access to onshore areas and acquisition of land rights in order to carry out petroleum operations.

Fundamental Principals:

- ❖ Prevalence of the public interest;
- ❖ Safeguarding of national interests;
- ❖ Fair consideration and resolution of conflicts between public interests involved;
- ❖ Harmonization of public and private interests;
- ❖ Negotiation and conciliation;
- ❖ Expropriation on the ground of public utility.

❑ Decree n° 120/08, December 22nd (Cont.)

We highlight:

❖ **Prevalence of the public interest**

The existing oil fields in the country are part of the public domain of the State, and in the case of competition between the public interest of the state and private interests must give prevalence to the public interest, as defined legally.

❖ **Negotiation and conciliation**

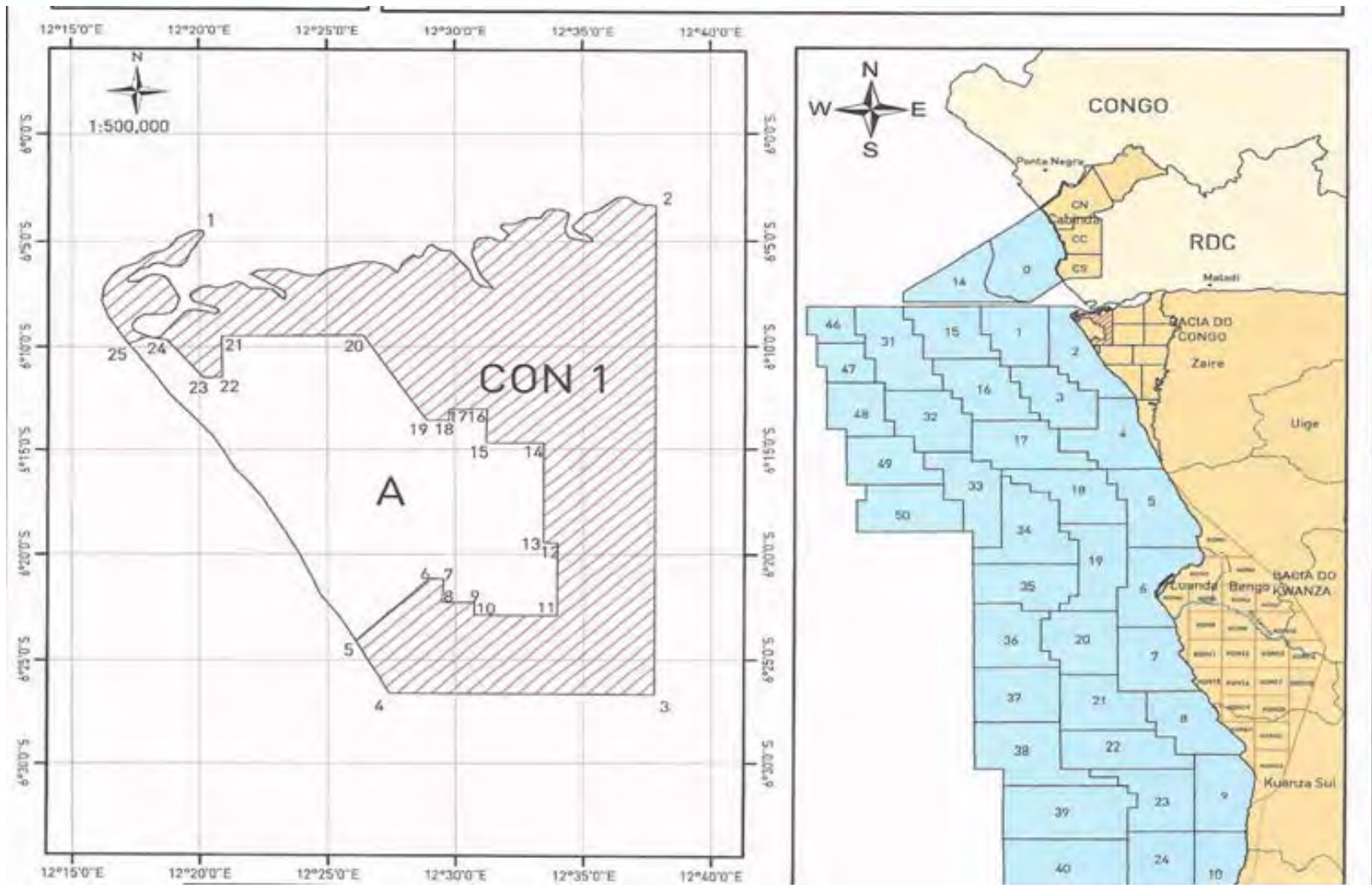
The right of access to and use of titrated by individuals for land application of petroleum operations must be based on the principle of negotiation and conciliation.

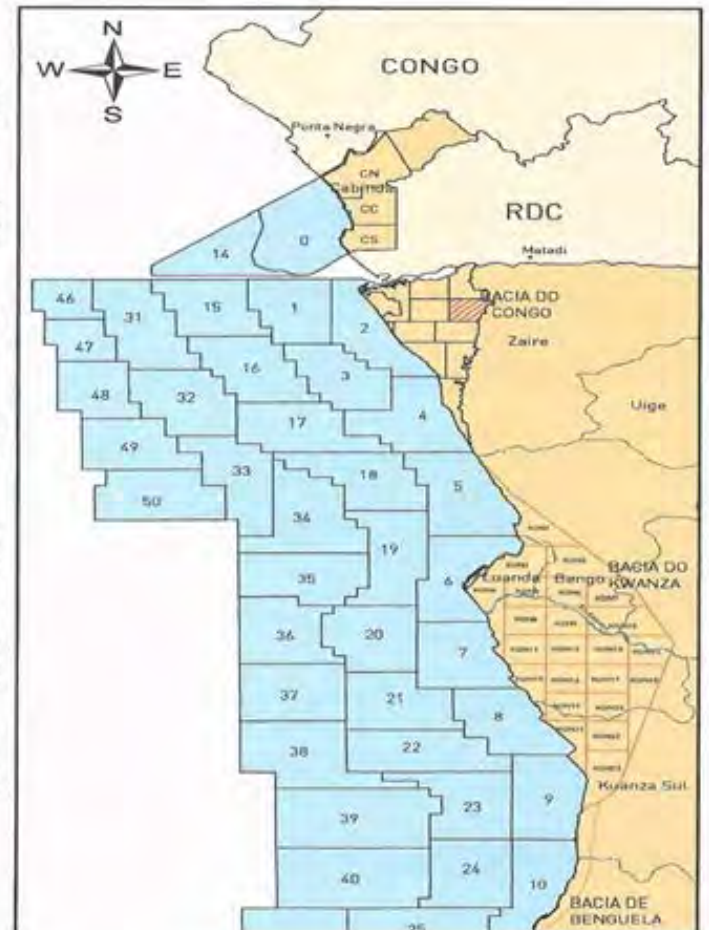
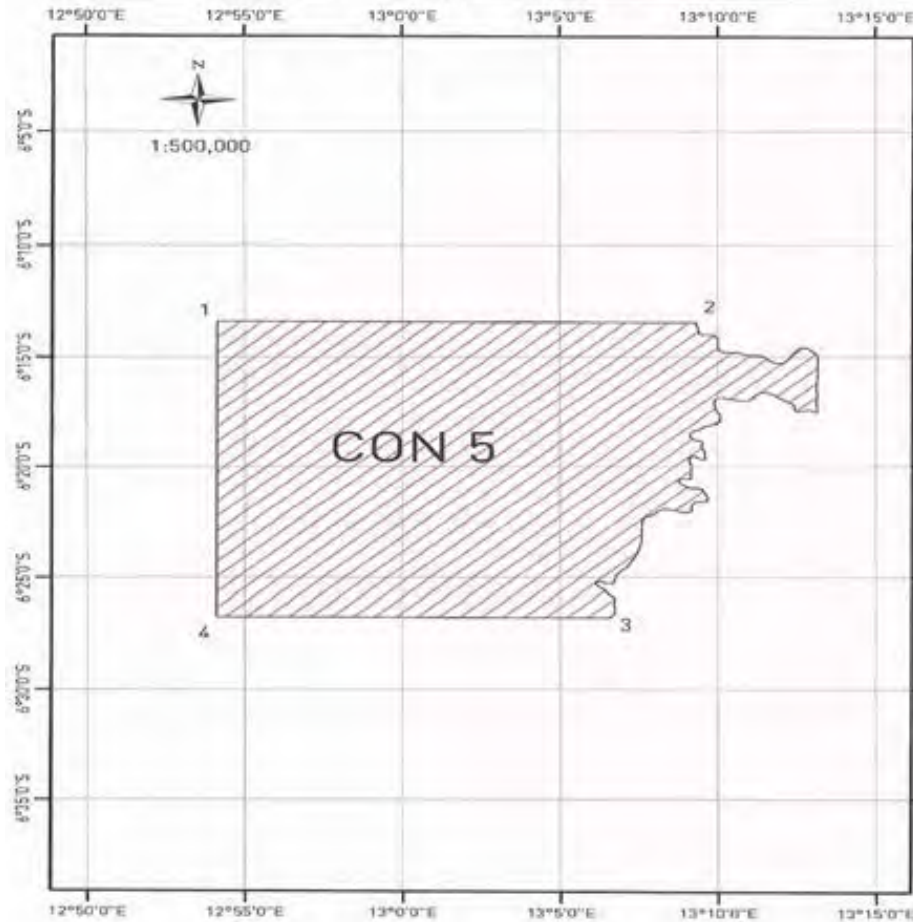
□ Decree n° 120/08, December 22nd (Cont.)

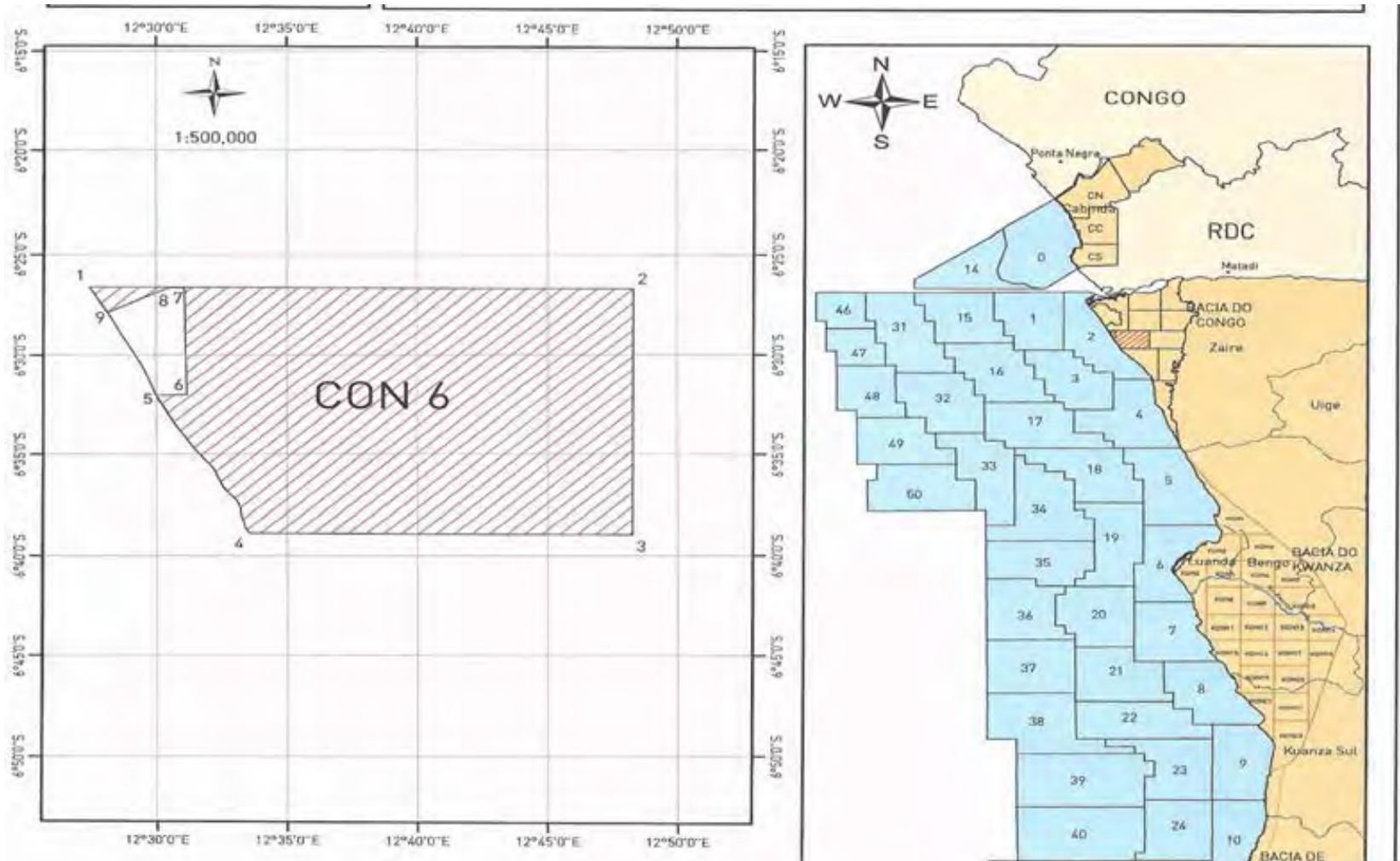
We highlight:

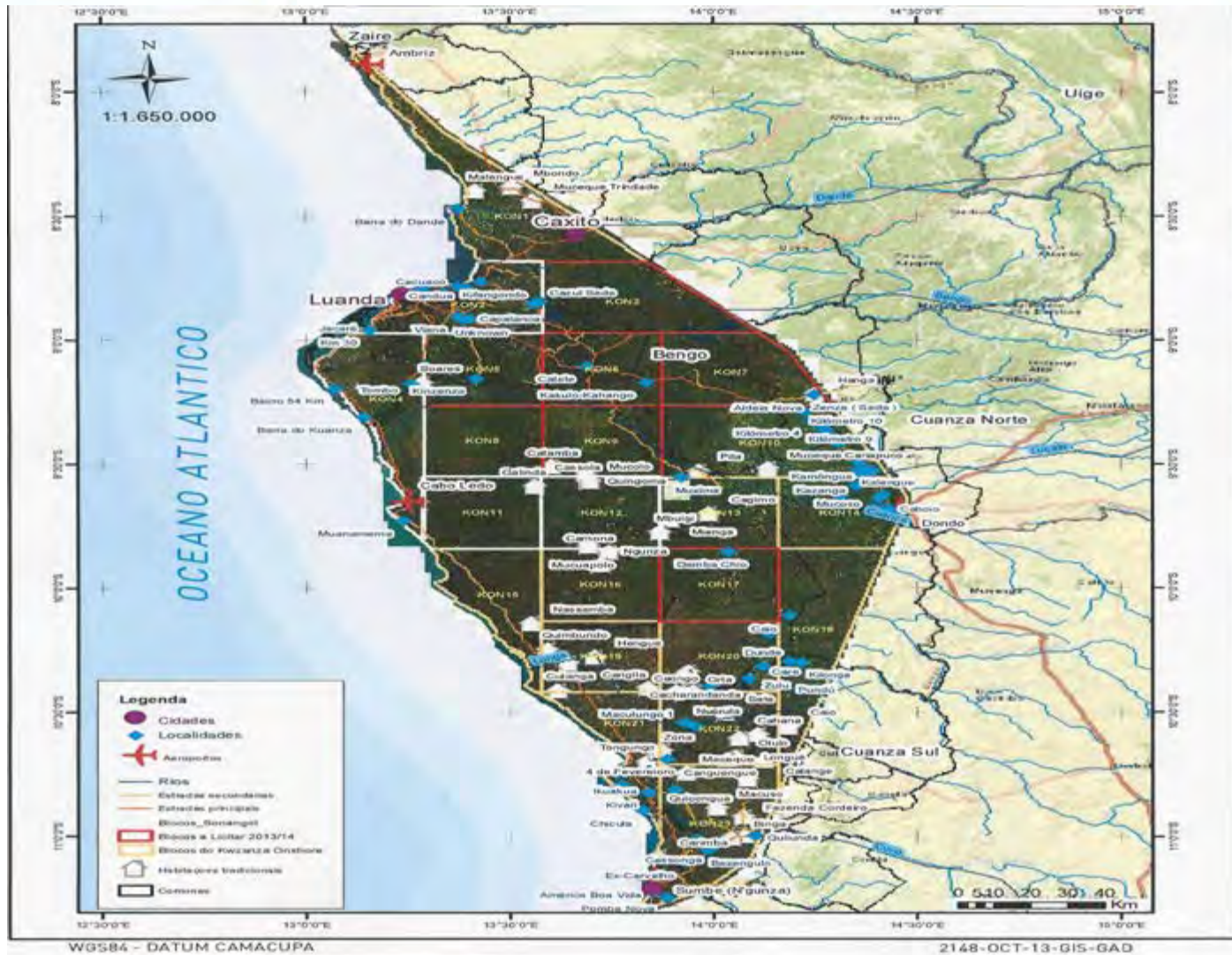
- ❖ Safeguarding of national interests;
 - ✓ The implementation of the petroleum operations must be done in order to protect national interests, with respect for the defense, security, cultural heritage, environment, navigation, research and conservation of natural resources, in particular biological, living and non-living aquatic;
 - ✓ Obedience to any restrictions imposed by the land rights legislation, with regard to total and partial reserves, cultural, architectural and archaeological heritage, as well as requirements for prior environmental impact assessment.

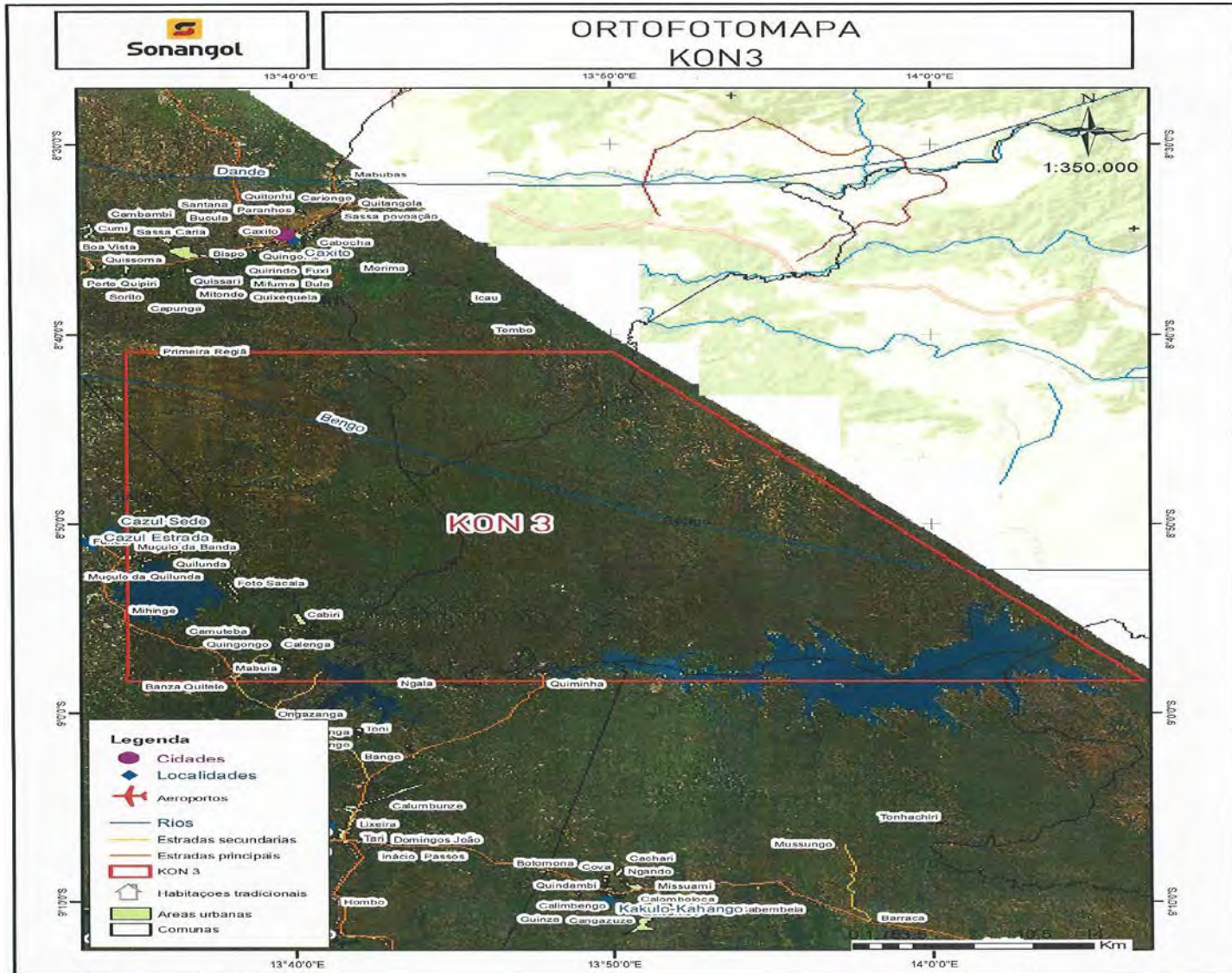


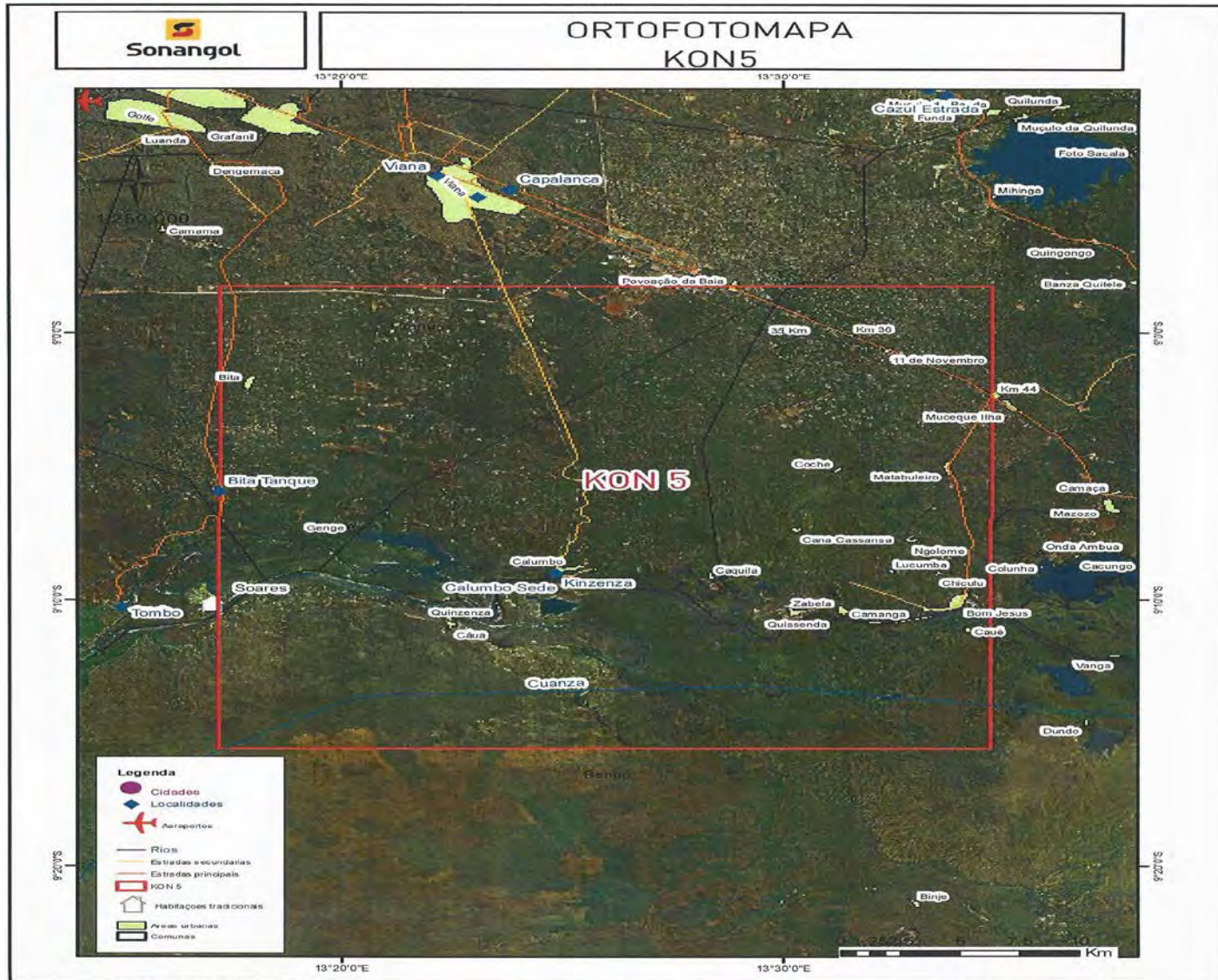


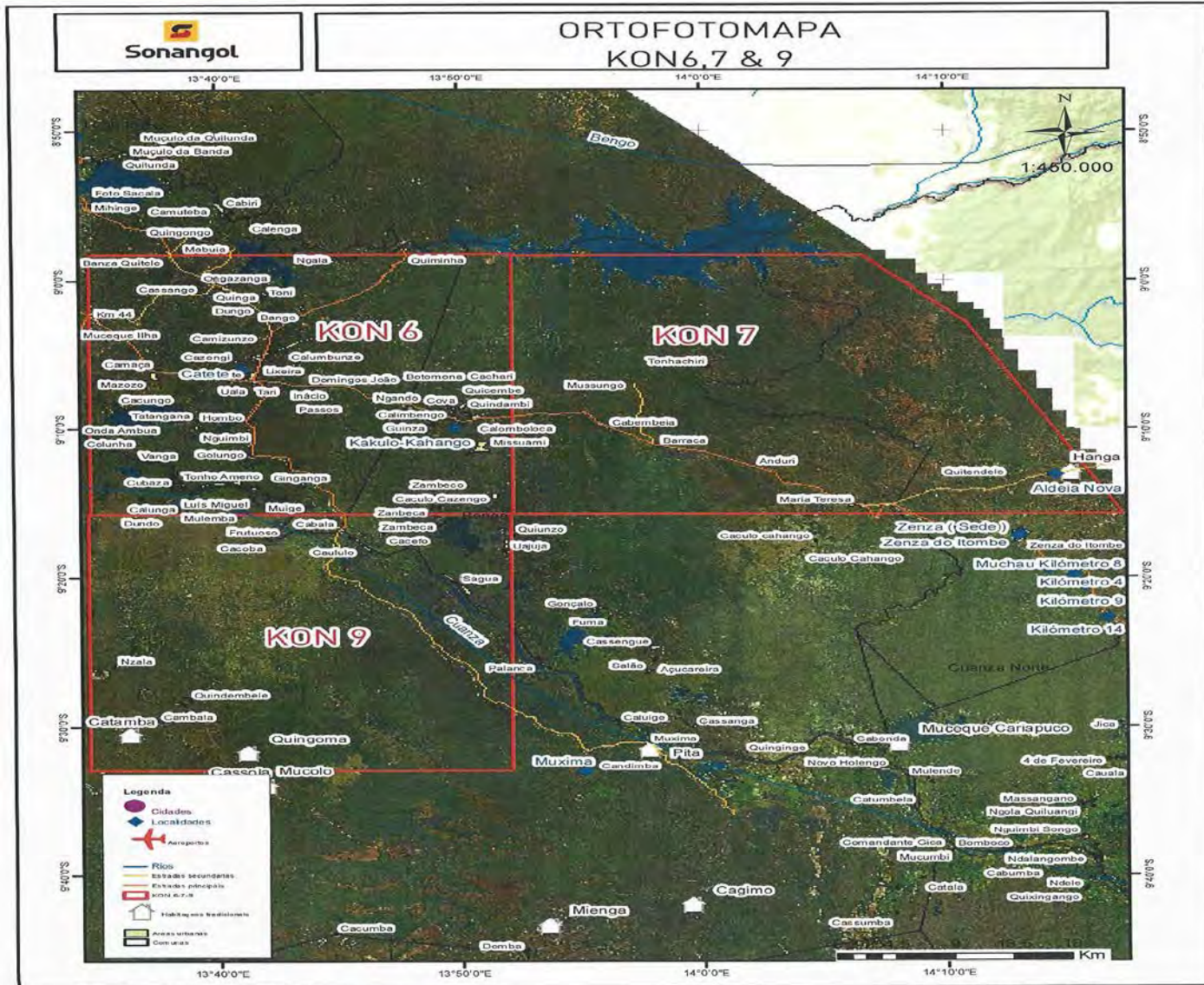


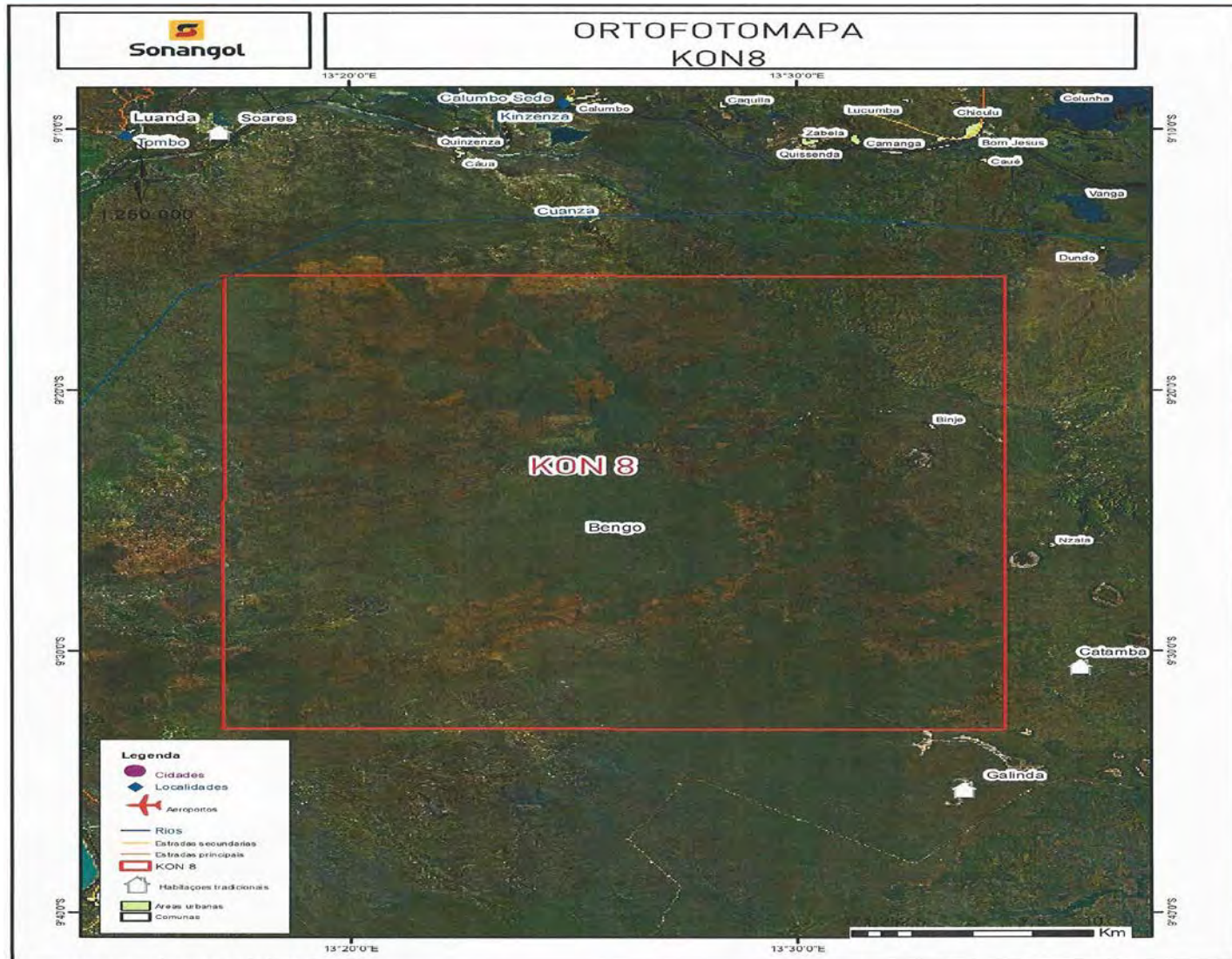


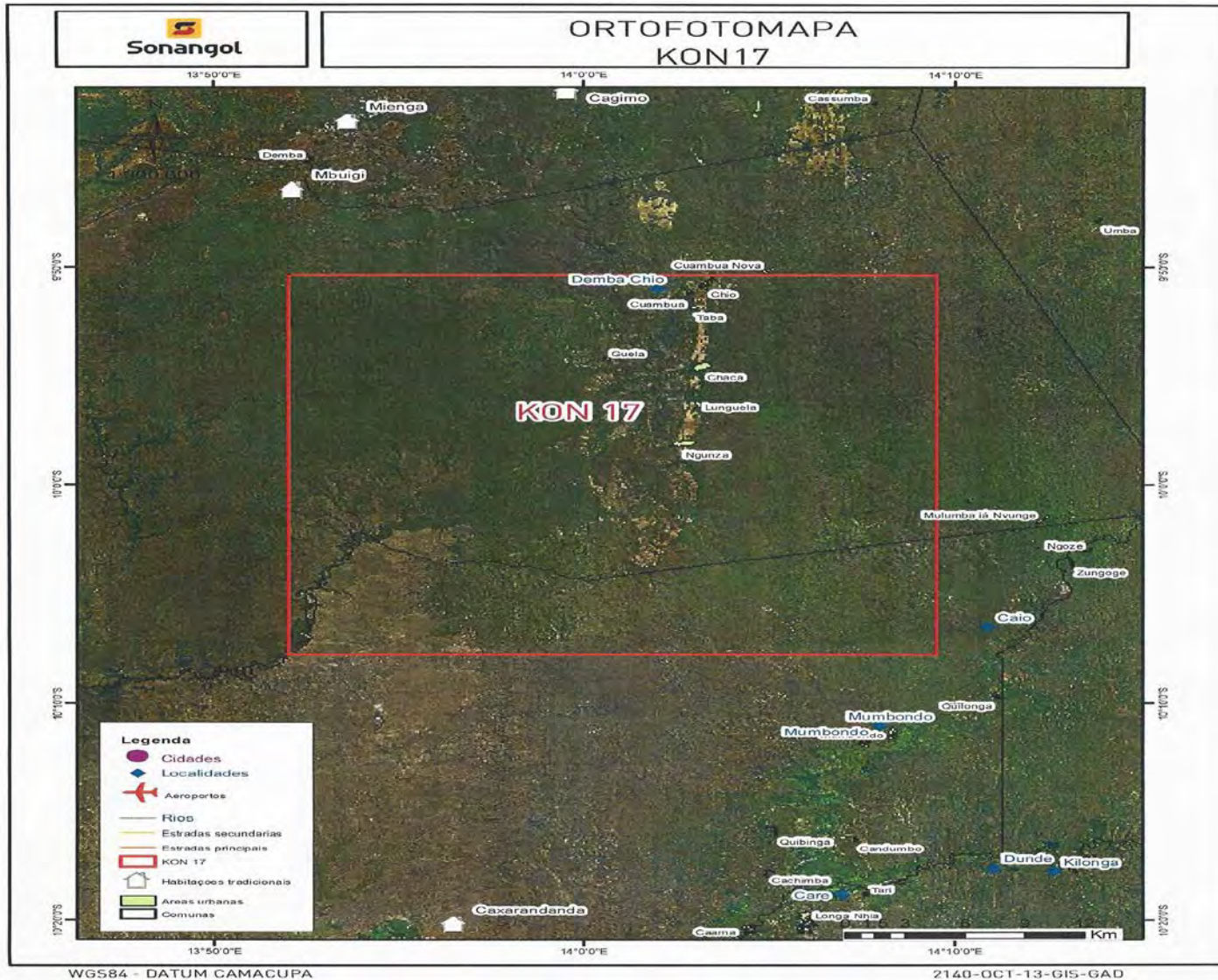












For information regarding:

- ❖ Pre-qualification requisites;
- ❖ Relevant Angolan laws;
- ❖ Contract model ;
- ❖ Data package prices;
- ❖ Press releases;
- ❖ Key dates;
- ❖ Points of contact;
- ❖ Roadshows presentations;
- ❖ Bid Launch.



WWW.SONANGOL.CO.AO

For informations regarding the License Round 2014:

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E-mail: new.concessions@sonangol.co.ao

For informations regarding the data packages:

Data Management Area (GAD)

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Telephone: +244 226 642214/5

Fax: +244 226 643025

E-mail: GAD_INFO@sonangol.co.ao



THANK YOU